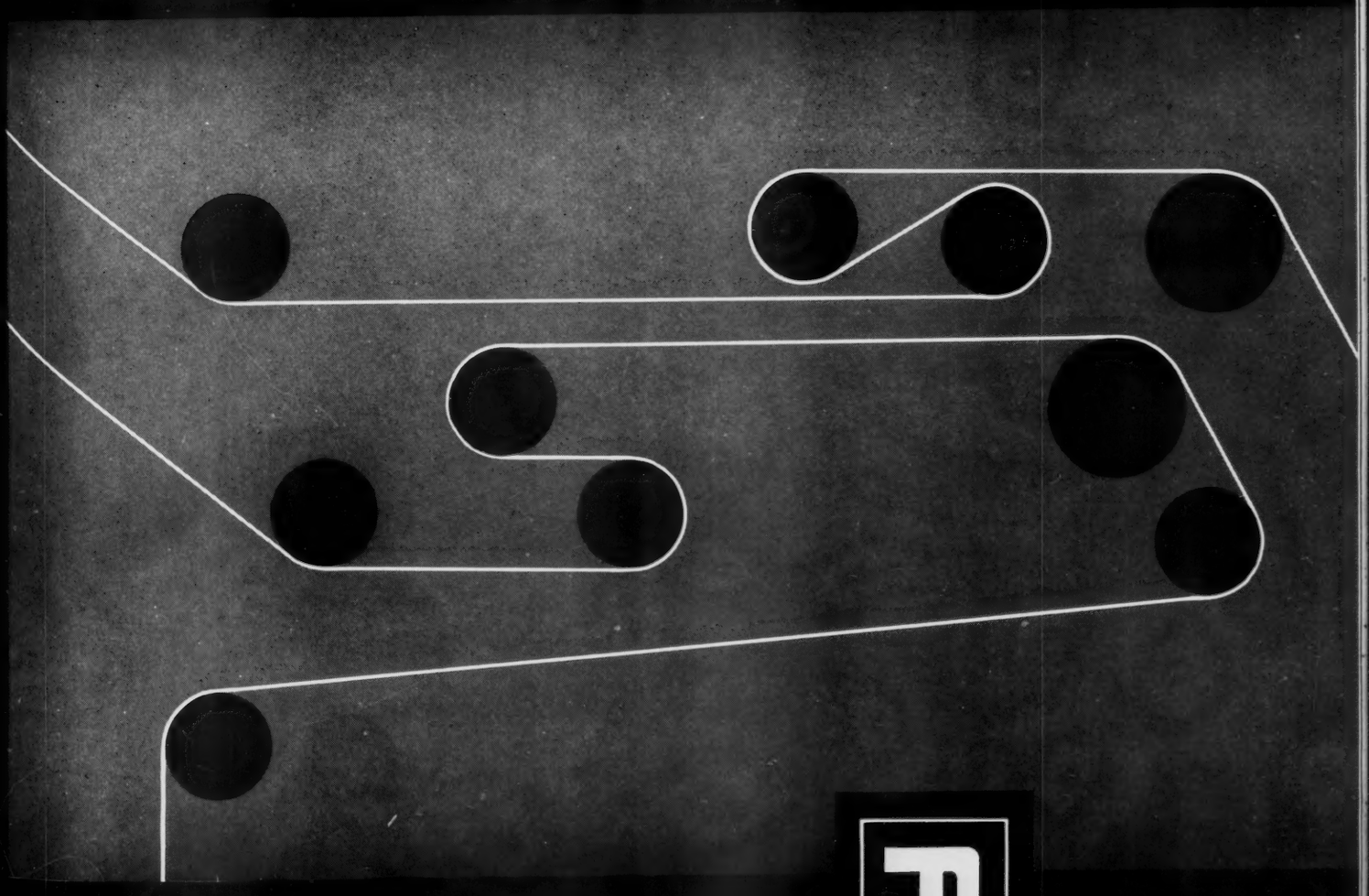
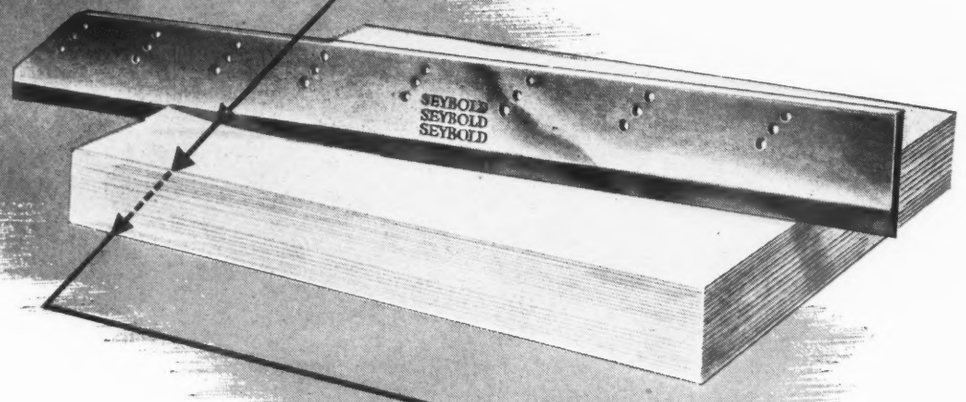
PRINTING EQUIPMENT



LESS WEAR . . . BETTER PERFORMANCE—WITH

SEYBOLD Z-ACTION

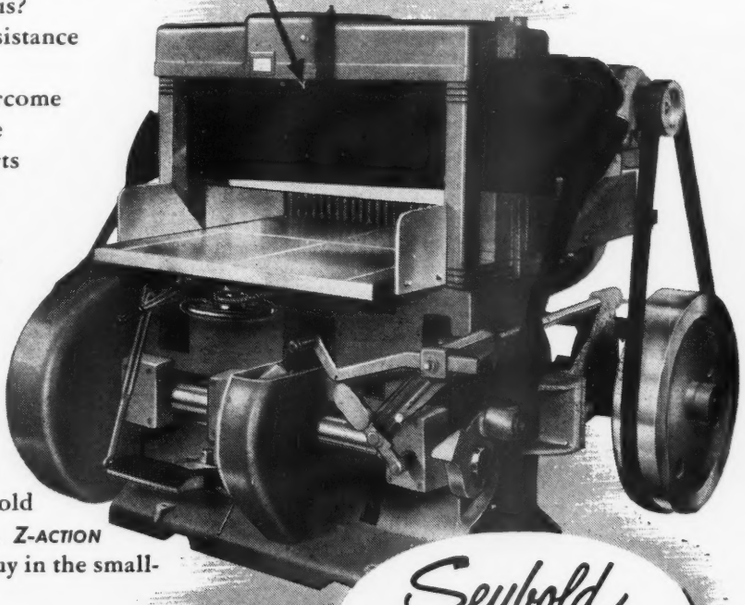


Zzzzzip! Ever think about what goes on inside a paper-cutting machine as the knife travels through the pile—in terms of what it means to you, that is? That unyielding pile of paper puts a lot of resistance in the path of even the sharpest knife.

The extent to which this resistance is overcome in the design of a machine determines the amount of wear there will be on moving parts . . . the size of repair bills . . . the frequency of knife regrinding.

Reducing resistance is a job for ***Z-ACTION.*** ***Z-ACTION*** reduces pile resistance best because it works *with,* not *against,* natural forces. Best, because it makes use of a guided shear angle that requires the least amount of effort from *two* husky pull bars to whisk the knife through the pile.

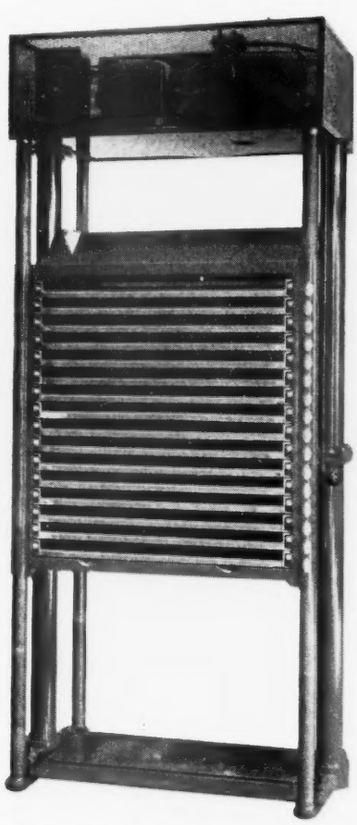
Z-ACTION is exactly the same knife action that has made all the larger sizes of Seybold Sixty Cutters so popular. Without a doubt, ***Z-ACTION*** makes the Seybold Heavy-Duty 40 the best buy in the small-size, low-price field today.



Seybold
HEAVY-DUTY 40"
PAPER CUTTER

HARRIS-SEYBOLD
General Offices—Cleveland 5, Ohio

HAVE YOU A "HOUSING PROBLEM" IN YOUR COMPOSING ROOM?



If you have, the Sta-Hi Power Lift Form File will solve it for you. . .

You can eliminate any "traffic jams" of forms and trucks, speed up production with more efficient operation.

One Form File provides quickly accessible storage space for sixteen full page size newspaper forms.

The entire carriage housing the sixteen sliding storage trays can be rapidly moved up or down to the level of the form truck. The form is then placed or removed at this convenient position, requiring a minimum of exertion by the operator.

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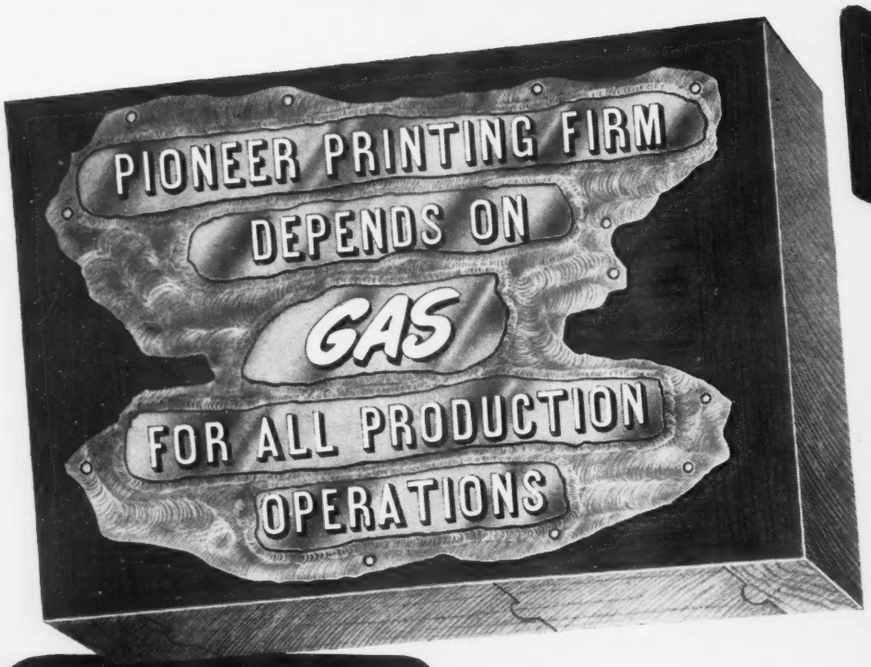
All Form File operations are made at this easy, natural, truck-level position. *No stooping or reaching is necessary.*

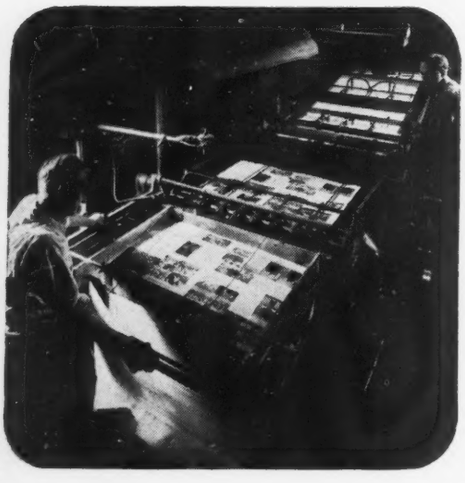
You'll find the Form File a space saver, time saver, money saver! Ask for complete details.

STA-HI

STA-HI CORPORATION • 1020 CROCKER STREET • LOS ANGELES 21



Four Gas-equipped Miehle Vertical Presses and, below, one of three Miller two-color presses, all GAS-equipped



PRODUCTION TECHNIQUES have been applied to every graphic arts operation at the 130-year old William G. Johnston Company, Pittsburgh, Pennsylvania. Modern high-speed presses and type-casting machines supply the volume printing requirements of many business and industrial organizations.

Since many of the processes require heat, the William G. Johnston Company has standardized on flexible GAS for presses, type-casting machines, metal-melting furnaces, glue pots. These diversified applications represent a few of the ways in which the productive flames of GAS serve the graphic arts, but Plant Manager, H. M. Fritz sums up the experience of his company in these words, **"GAS is important to us because of its speed, flexibility, economy, and cleanliness. We have used Gas-equipped machinery for many years with complete satisfaction."**

The long list of GAS users, and the many ways in which they apply GAS to graphic arts processes, is evidence of the wide acceptance of this versatile production-tool. You'll find it worthwhile to check up on GAS for any heat processing requirement.

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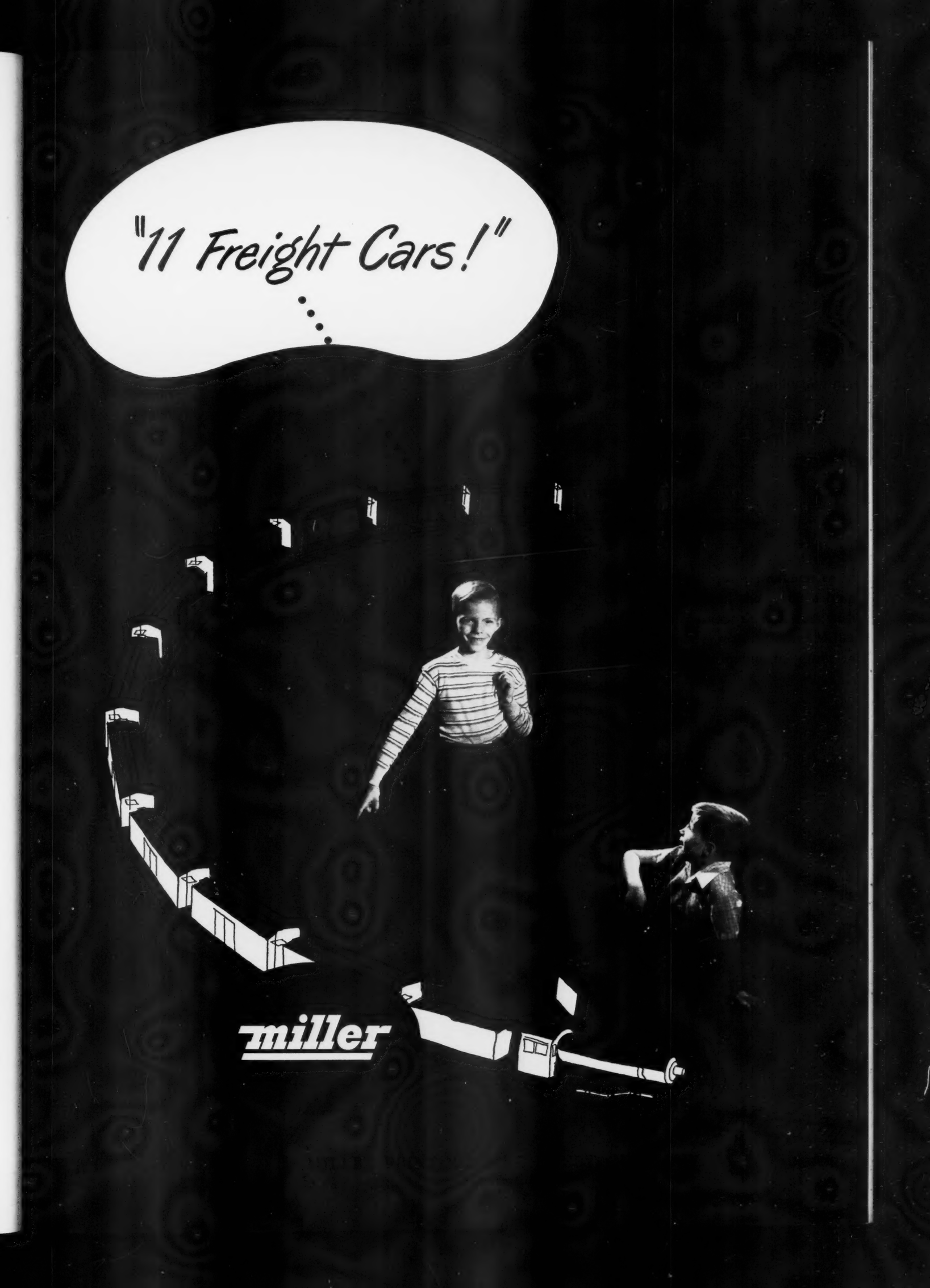
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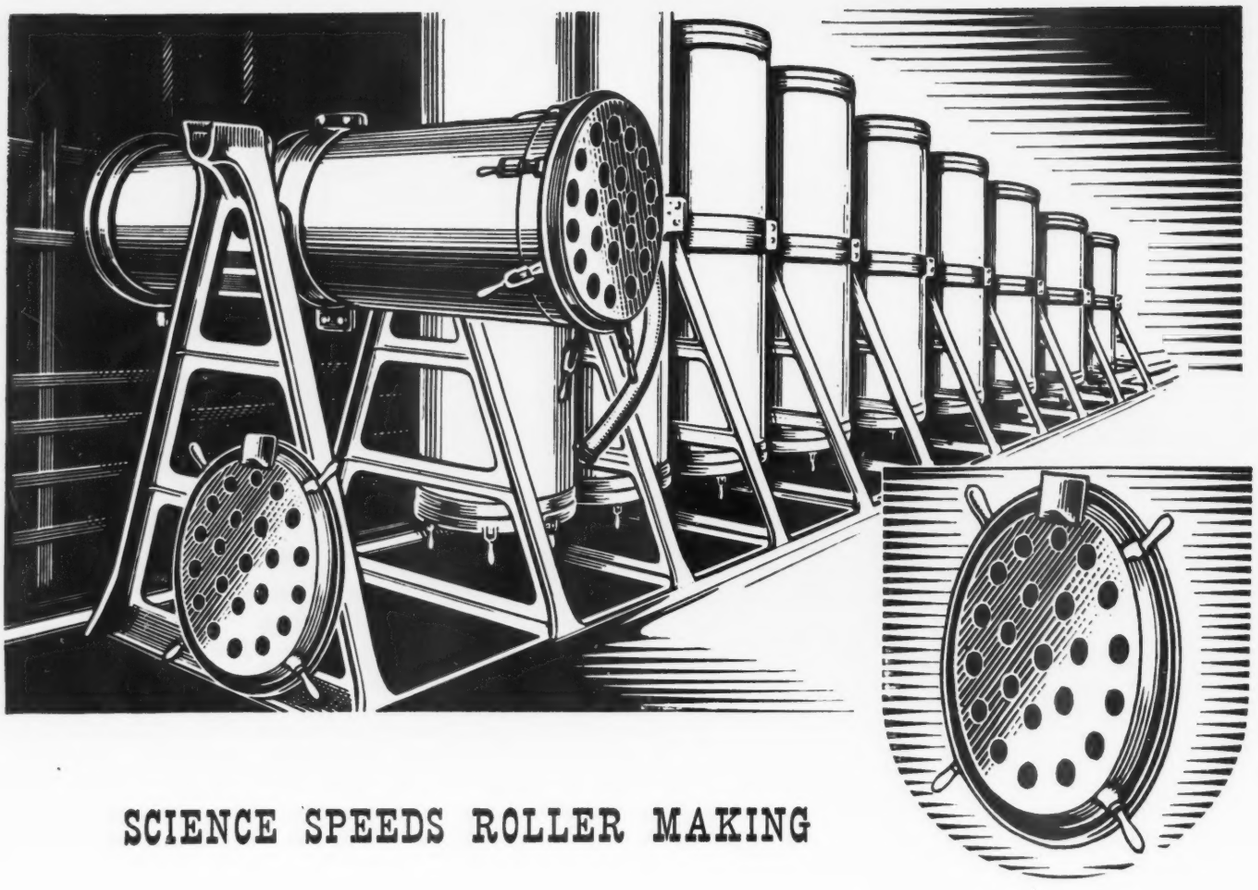

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PRINTING EQUIPMENT *Engineer*

Volume 77 Number 4

A technical publication for the mechanical executive responsible for printing production, equipment and supplies in the commercial, magazine, private plant and daily newspaper field.

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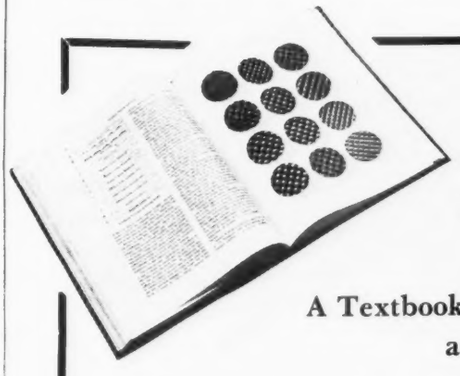

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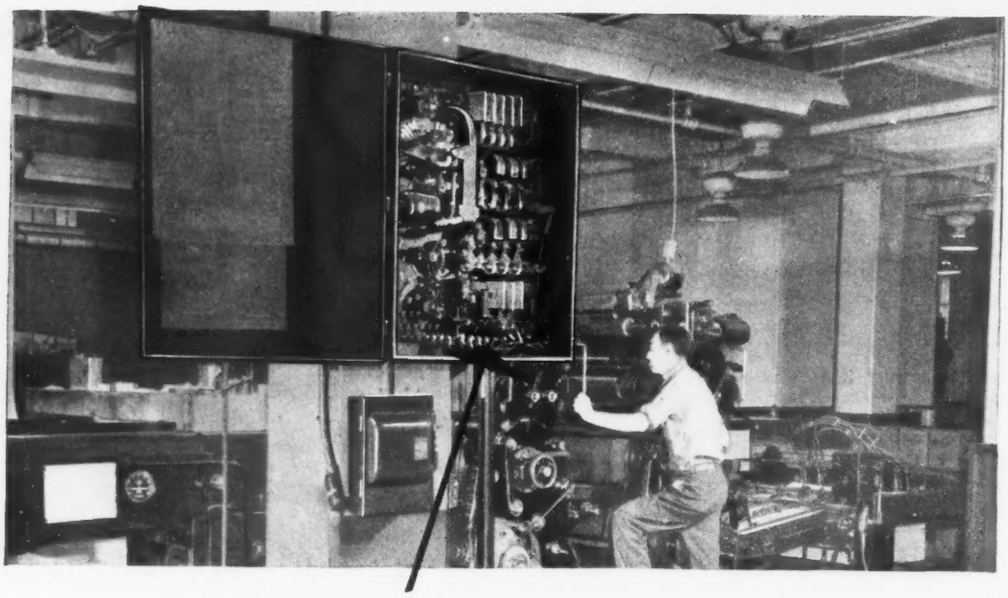
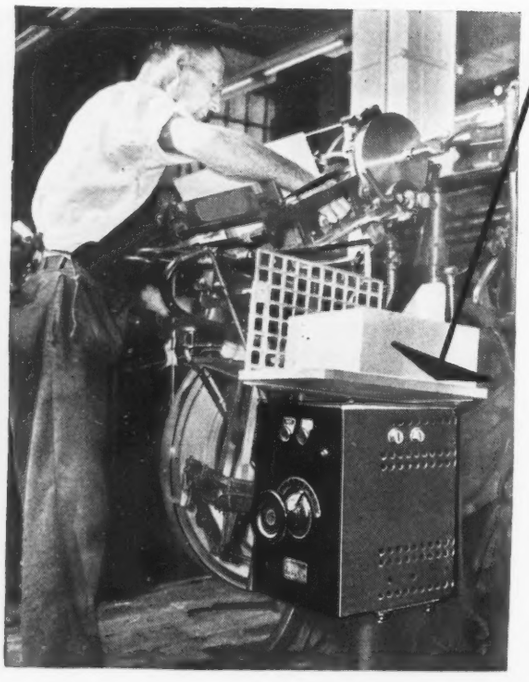


There's a G-E control for every press



Yes, there are standard G-E speed controls for all size job presses—from the small unit which provides a platen press with variable speed, to the large rotary-offset press control which allows jog forward, jog reverse, trip slow-down, remote operation, and adjustable starting and slow-down torque.

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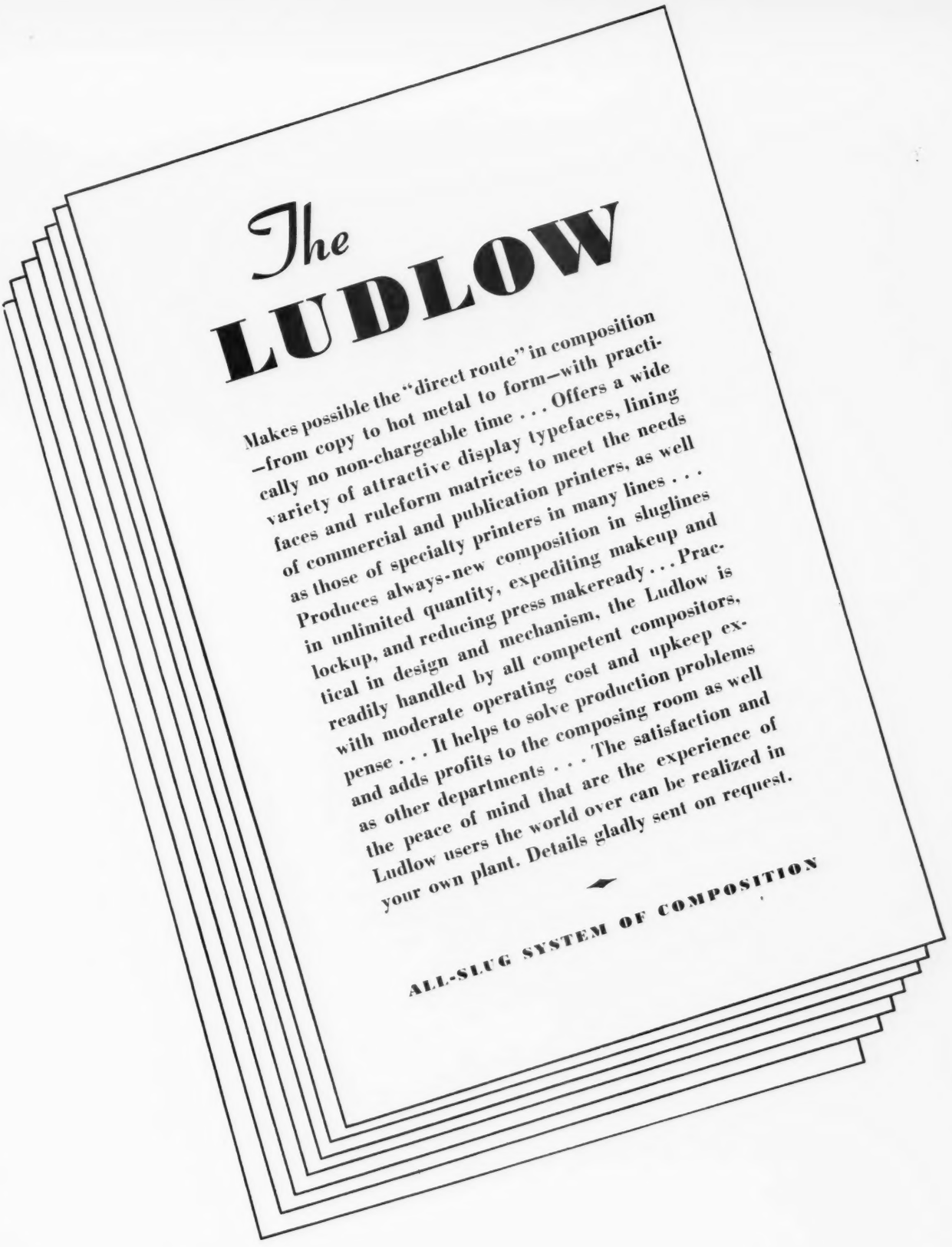
GENERAL ELECTRIC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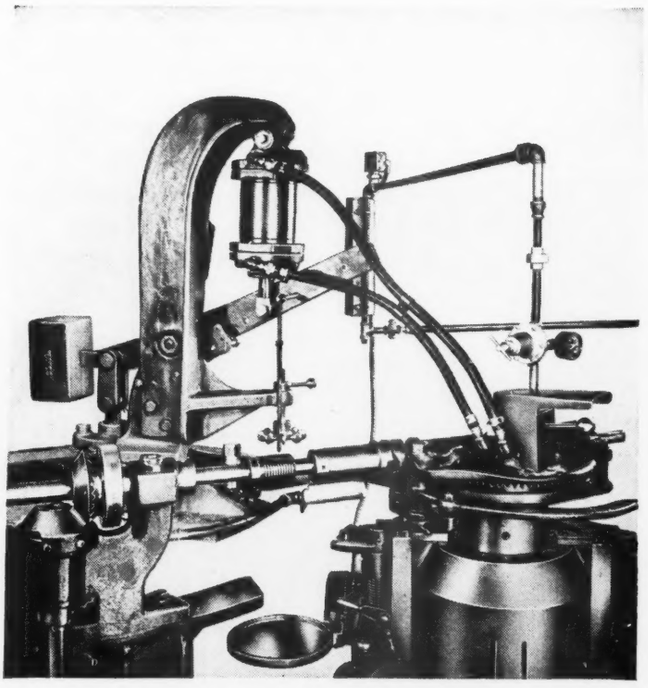

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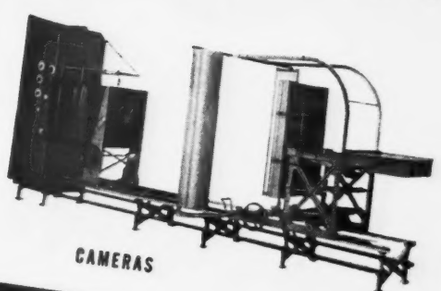

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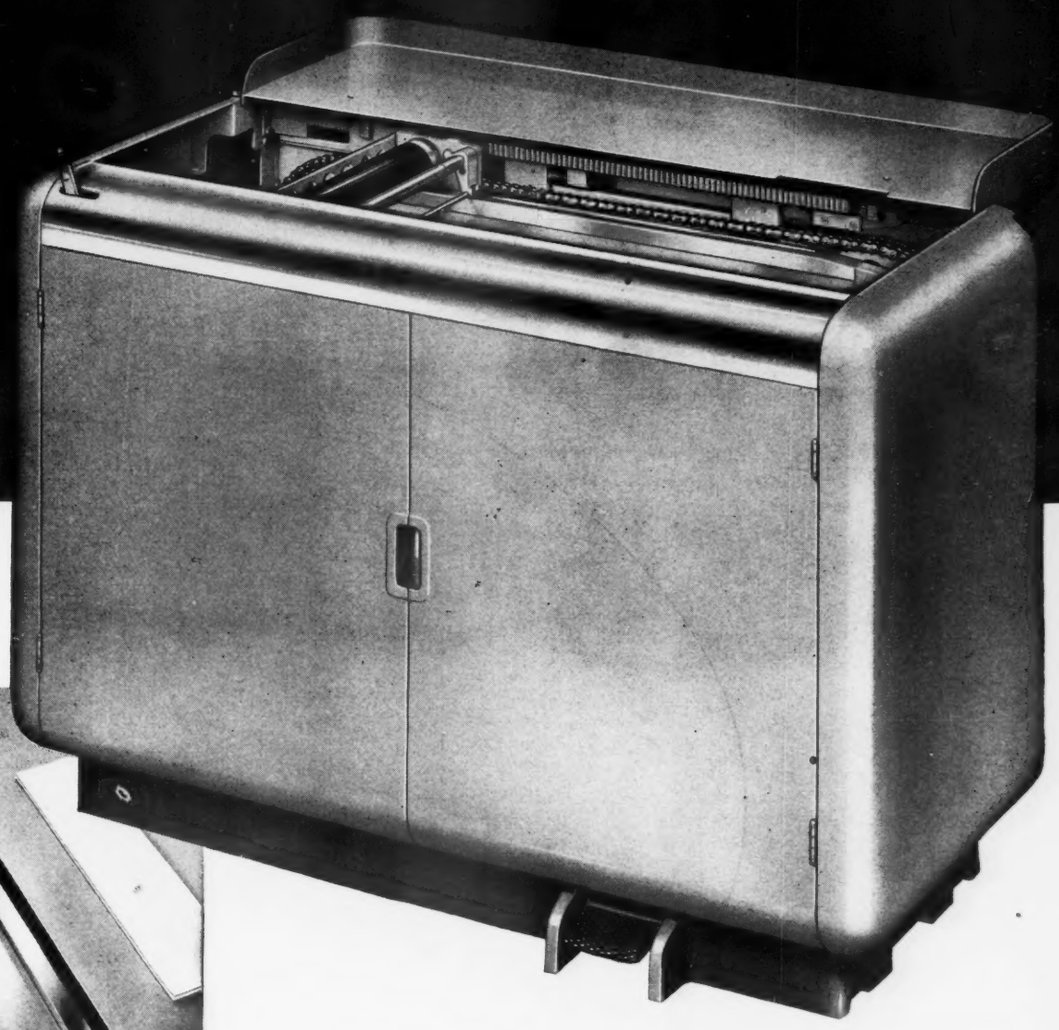
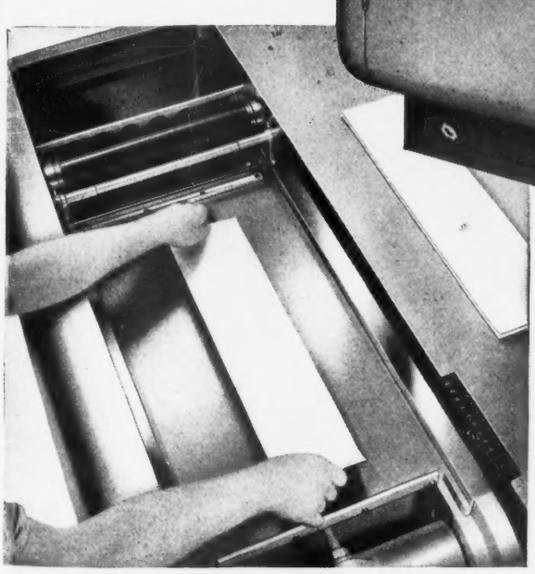
NO. 23
VANDERCOOK

PROOF
PRESS





A New Vandercook Galley Proof Press With Safety Device to Instantly Stop Machine Upon Contact with any Object Above Type High!

Now in production, this completely redesigned machine will meet the demand of newspapers and printers for a *High Speed* and *Safe Electrically Operated Proof Press,* capable of delivering up to 40 proofs a minute!

The new No. 23 Vandercook *"Safe Electric"* Proof Press has a bed size of 15″ x 26″, and occupies a floor area of 36″ x 57″. Inking mechanism consists of a motor driven Ink Drum, Vibrator and 4 Synthetic Rubber Form Rollers. Two wide hinged doors on the front and back of machine make all driving and operating mechanism readily accessible.

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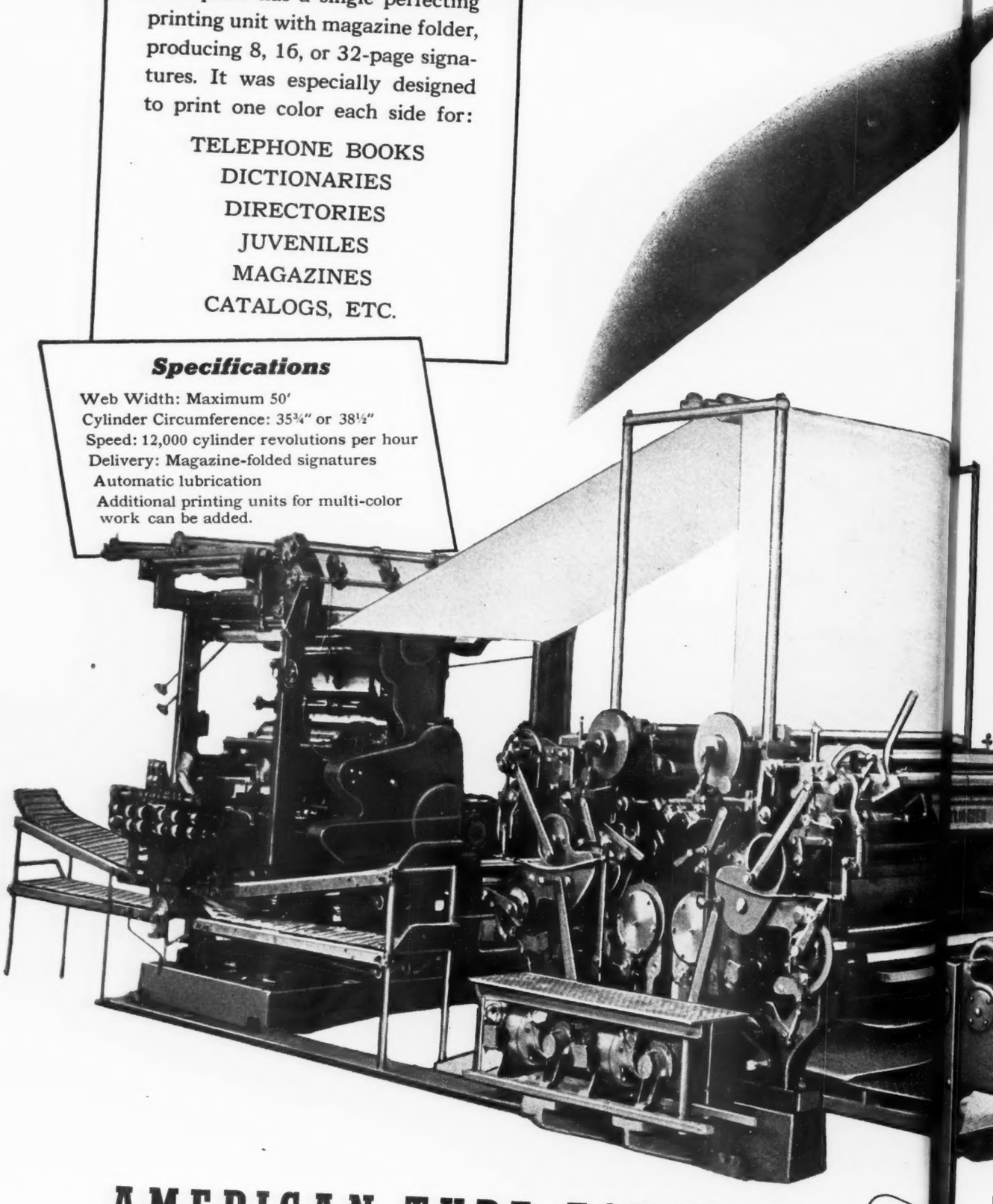
MAGAZINES
CATALOGS, ETC.

Specifications

Web Width: Maximum 50′
Cylinder Circumference: 35¾″ or 38½″
Speed: 12,000 cylinder revolutions per hour
Delivery: Magazine-folded signatures
Automatic lubrication
Additional printing units for multi-color work can be added.



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Book and Magazine Web Perfecting Press

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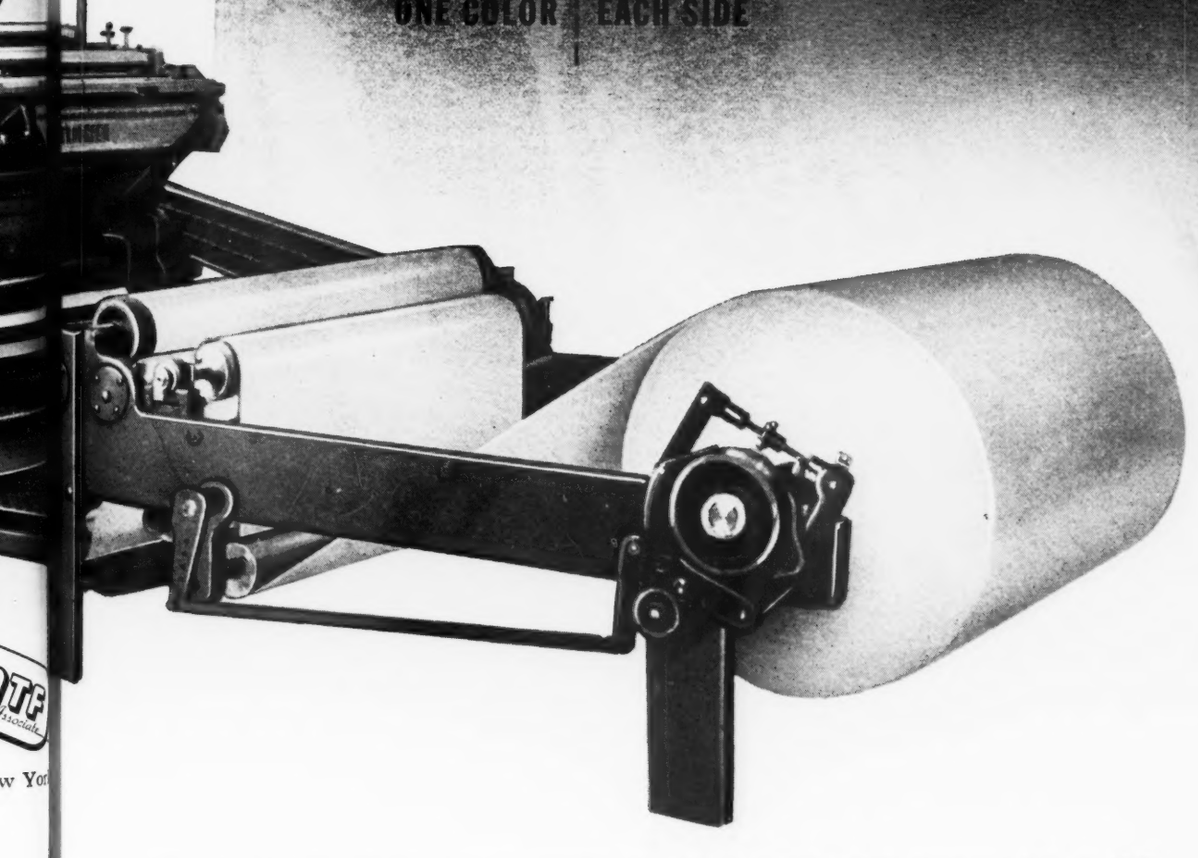

His new ATF LITTLE GIANT

"has proved satisfactory in EVERY way"

E. S. EVANS, publisher of the Centralia (Wash.) Tribune, goes on to say, "We have run almost every kind of stock through it." Other printers like the ATF Little Giant because it "has fine ink distribution"; has "large feeder and delivery capacity"; it is "easy to change from one job to the next"; for its "quick makeready, fast lock-up, and quick register." Each owner of an ATF Little Giant finds many reasons for admiring this versatile press, but they *all* like its low cost per thousand impressions and its speeds of up to 4000 an hour. Ask your ATF Salesman for complete information.

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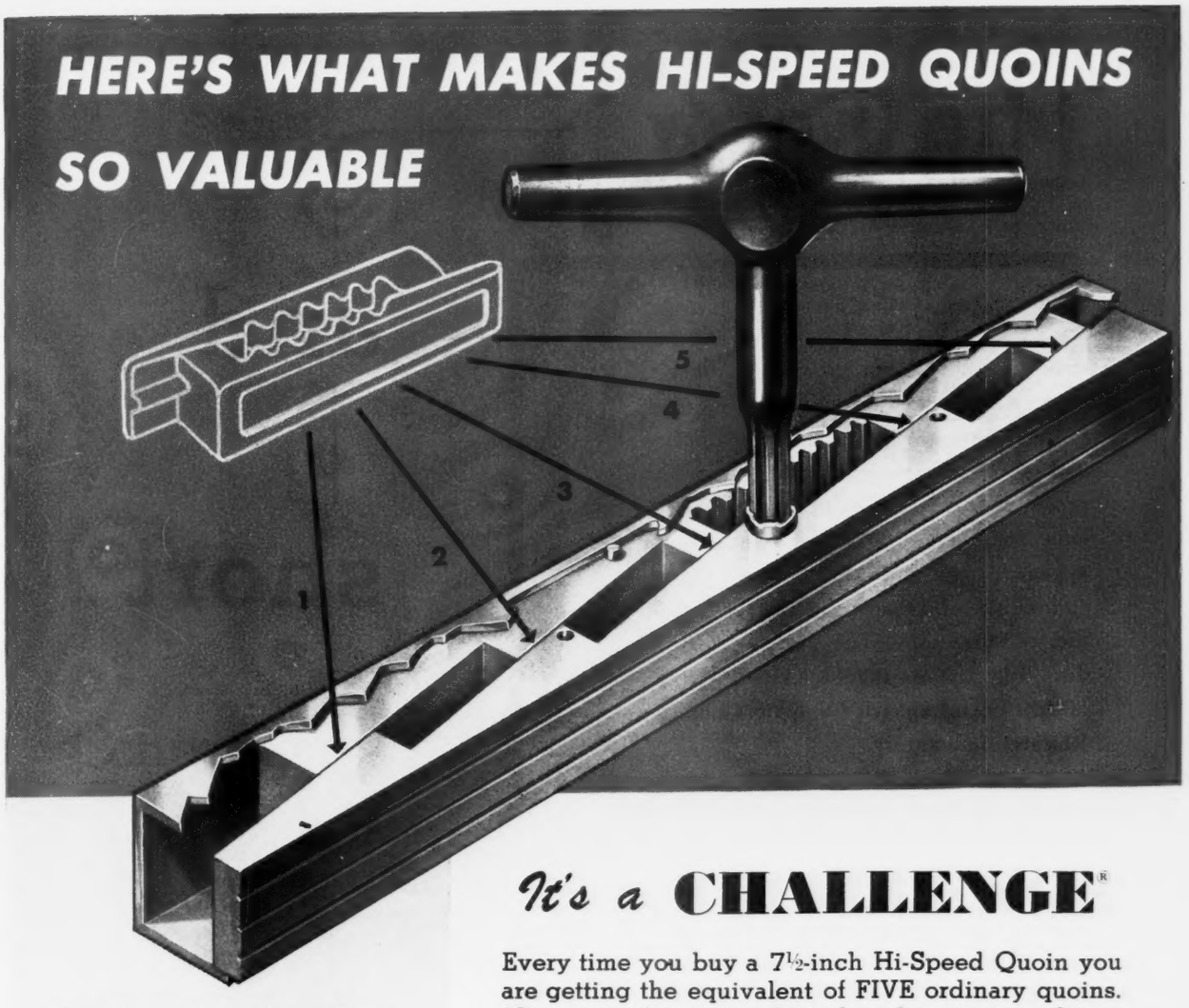

Cut-away view shows how ONE 7½-inch Challenge Hi-Speed Quoin operates as a series of FIVE ordinary quoins.

SIZE	HI-SPEED		ORDINARY
3"	1	equals	2
4½"	1	equals	3
6"	1	equals	4
7½"	1	equals	5
9"	1	equals	6
10½"	1	equals	7
12"	1	equals	8

It's a CHALLENGE®

Every time you buy a 7½-inch Hi-Speed Quoin you are getting the equivalent of FIVE ordinary quoins. (Corresponding equivalents for other sizes are shown in the table at left). That's why two self-contained, self-locking Hi-Speed Quoins do the work of four to eight ordinary quoins with time saving up to 80%.

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Challenge Hi-Speed Quoins—for press or foundry forms—are made in seven sizes. Ask for data and prices NOW!

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1674

The Long and short of it

Independent research shows that the visibility of this type is approximately the same as that of the reference marks on linotype and intertype matrices which have been processed the Matrix Contrast way. By the same tests, the copy at the right has the approximate visibility of unprocessed reference marks on matrices that have been in use for some time. The studies were conducted by Dr. Matthew Luckiesh, Director of the General Electric Company's Lighting Research Laboratory.

Operators can "see what they set" when machines are equipped with sharp, clean-etched Matrix Contrast reference marks. Further, with the new Matrix Contrast Colors operators can tell at a glance if there's a wrong font letter in the line. With colored reference marks, different fonts have their own distinguishing color. You can't miss the contrasting color of the wrong-font letter. Compare this type with that at the right. There's an eloquent difference in visibility between them.

This torturing type is the approximate equivalent of what operators are forced to read when they hunt errors with unprocessed matrices. Eyestrain and fatigue are lessened when reference marks have been processed the Matrix Contrast way. Linotype and Intertype operators throughout the country have told us how much less strained and tired they feel after a day's work at machines that have been processed the Matrix Contrast way.

The difference speaks for itself. In the words of Dr. Luckiesh: "The processed matrices have a visibility approximately equivalent to 9½-point type (Printed with black ink on white paper) . . . as compared with the non-processed matrices which have a visibility equivalent to 3-point type under the same test conditions."

YOU CAN SEE

MATRIX CONTRAST CORPORATION

Empire State Building, New York 1, N. Y. — 326 W. Madison Street, Chicago 6, Ill.—1105 Trenton Street, Los Angeles 15, Calif. — Sole licensees of the Percy L. Hill Matrix Contrast Patent No. 1,796,023, other patent pending. European Agents: Funditor, Ltd., 3 Woodbridge Street, Clerkenwell Green, London, E. C. 1.

Matrix Contrast Service

Centrifugal Pressure Casting

for producing electrotype and stereotype curved printing plates —Plastic molding used in conjunction with centrifugal pressure casting for making electrotypes—Can also be used in casting curved stereotype plates.

By ROBERT R. MYERS*

President, Capital City Printing Plate Co., Des Moines, Ia.

ROBERT R. MYERS

APPROXIMATELY 500 years ago, a book entitled *Speculum Humanae Salvations*, containing images and letters was printed from blocks, using a new ink which was more viscous and tenacious than the ordinary inks then in use. Moreover, it did not smear like the ordinary inks. This marked a new era in the world. In rapidly developing steps, books which were formerly written by hand and available only to the nobility and the wealthy, were made available to the people in general. In 1639 the first press was set up in the then British Colonies of North America, marking the beginning of the printing industry in this country.

The passing years have brought many improvements in equipment and methods, particularly in equipment. This has resulted in the methods known and used today in electrotyping, stereotyping and other processes. The industry has progressed from impressions of single letters laboriously made by hand, through the platen press, the many type of flatbed presses, reciprocating presses to the high-speed rotary press now in use.

Improvements in the design of presses and other equipment necessitated improvements in setting type, and in the making of the plates which do the actual printing. The printing industry has demanded greater speed, more accuracy, higher quality and increased efficiency. With reference to electrotype plates, the lead mold process, Vinylite molding process and products of the Tenak Corporation have been developed over the years.

Approximately five years ago the Capital City Printing Plate Co. pioneered the practical development of using plastic sheets as an electrotype molding medium. The method was developed at Battelle Memorial Institute, Columbus, Ohio. This development was sponsored by Printing Plates Research, Inc. This and companion sheet molding methods such as Tenaplate and Tenalite are being adopted rapidly by the printing plate industry. The adoption of these new methods in the electrotyping industry has resulted in clean and improved shop conditions, added production speed, more plate accuracy and general efficiency.

Now, this progressive company announces an entirely new process for the manufacture of curved printing plates. The new method for producing the body section of the electrotype plate consists of equipment for applying the molten backing metal to the curved shell while the shell is revolving at a given speed. The advantages will be explained below. The process is equally adaptable to the manufacture of all curved electrotypes and curved stereotypes. This process is one of centrifugal pressure casting. In its entirety, with respect to the making of curved electrotypes, it begins with the plastic mold and ends at the proof press.

Dependable Registration

The development of the plastic sheet molding material together with the new centrifugal pressure plate casting method makes possible a great improvement in rotary letterpress printing. The electrotyper can now produce four-color curved printing plates that have dependable

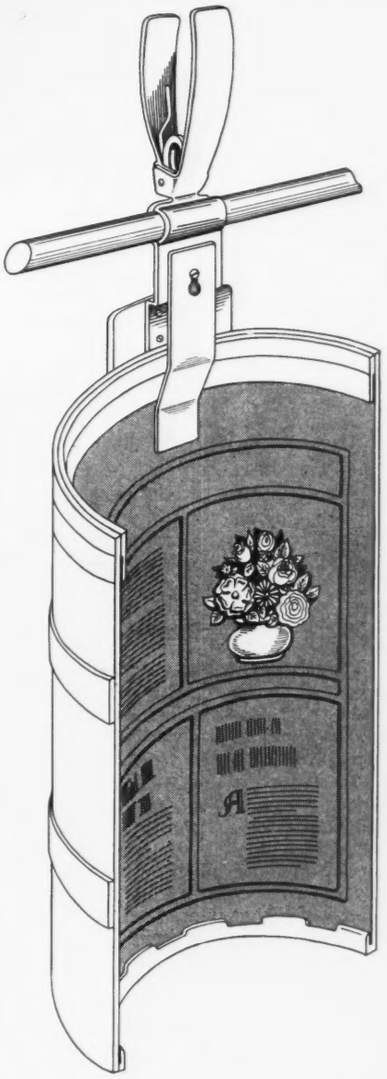


Fig. 1.—The plastic mold has been mounted inside the curved mold holder, ready for suspension in the plating tank where copper shell will be deposited on inner surface of the curved mold. The mold conforms accurately to curvature of plate holder. In turn, inside curvature of plate holder conforms exactly to outside curvature of finished plate when it is mounted on printing press cylinder. Mold holders of various curvatures to suit printing press cylinder diameters are provided.

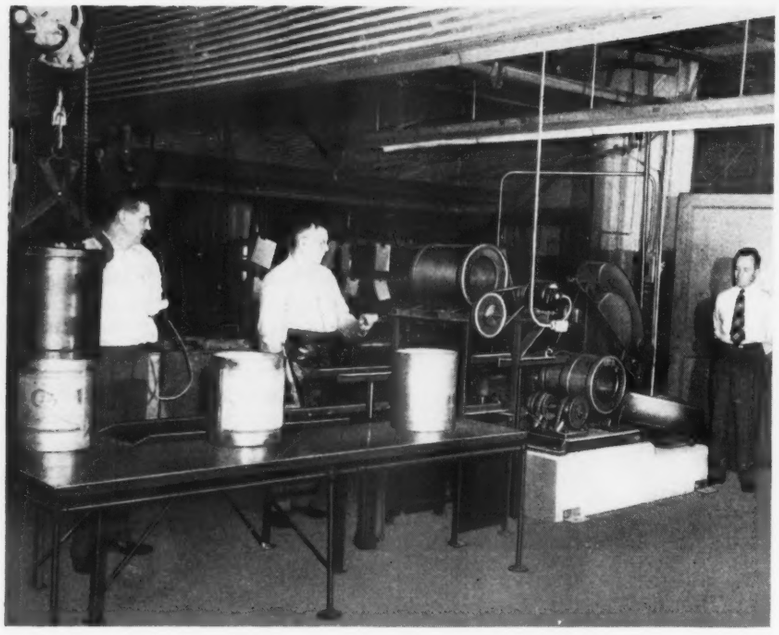


Fig. 3.—View of centrifugal pressure curved electrotype plate casting machine in plant of Capital City Printing Plate Co., Des Moines, Ia. The friction driving mechanism is encased in the hood which has been raised to permit changing drums. The drum in the machine is resting upon the idler pulleys which permit rotation of the drum when hood has been lowered.

On the stand at the left of the casting machine a drum is being preheated to a given temperature before swinging it into the casting machine by air lift. The small motor revolves the drum over gas burners so the drum will be heated evenly.

At the left of this illustration, note the lift for releasing the cast from the drum on the table which is used for handling plates in production. Total length of table and machine is 17 ft. The casting machine itself is mounted upon a concrete slab for smooth operation.

registration. This revolutionary change not only shortens the element of curved platemaking time but shortens the costly lapse of time in starting press runs to secure registration.

Steps in the Process

The centrifugal pressure casting process begins with the making of the plastic mold. The plastic mold and the plate casting method are complementary to each other. For electro-deposition, the plastic mold is placed in a curved mold holder. Being flexible, the plastic mold conforms accurately to the curvature of the mold holder. In turn the inside curvature of the mold holder conforms exactly to the outside curvature of the finished plate when it is mounted on the printing press cylinder. Thus it will be seen that plates manufactured by this method are produced from the curved shell, the curvature of the backed-up plate being of the proper diameter to fit the press cylinder.

The flat casting pans in which molten metal for the backing usually is poured, are eliminated in this curved electrotype platemaking process.

Plating the Shell

After the plastic mold has been placed inside the curved mold holder as mentioned above, the assembly is suspended in the plating tank for electro deposition of the copper which will form the shell. The plastic mold is accurately curved to the radius of the finished plate and is held in the fixture shown in Fig. 1. Deposition of the copper shell is accomplished in conventional plating tanks using curved copper anodes. The next step in the process is to trim the copper shell. Proper alignment of the shells with respect to their center line of curvature is accurately and easily handled by use of a newly designed trimming machine shown in Fig. 2.

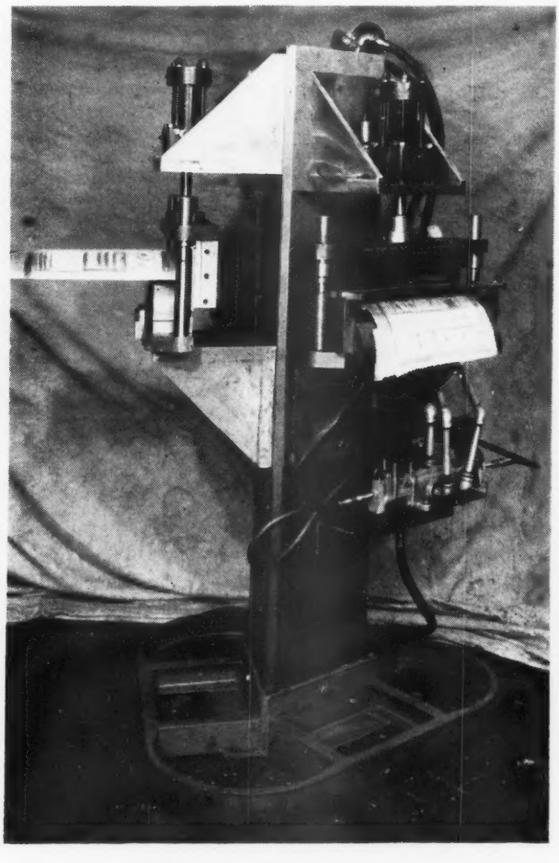


Fig. 2.—Before the curved copper shell is placed in the centrifugal pressure casting machine it is squared and trimmed to size in this machine. Proper alignment of the shell with respect to its center line of curvature is accurately obtained. The trimmed shells are securely fastened together by means of a prepared thin-grooved strip of aluminum to form a circular sleeve, corresponding to exact circumference of the inside wall of the casting drum.

Centrifugal Pressure Casting

The curved electrotype shells after being accurately trimmed are securely fastened together by a prepared thin grooved strip of aluminum so as to make a circular sleeve in exact circumference of the inside wall of the casting drum before insertion.

The centrifugal pressure developed in the backing up metal forces the shell against the wall of the drum. When cooled, the printing plate is perfectly formed. The casting operation requires but a few minutes. The plate thickness may be controlled within a few thousandths of an inch of the desired thickness. The amount of pressure exerted on the shell is dependent upon the speed at which the drum is rotated. Experiments have proved the proper speed, in relation to the drum size and the amount of metal used, is within a range that will not damage the printing surface of the plate, but is sufficient to produce accurately curved plates without raising the open non-printing areas. In Figs. 2, 3 and 4 are shown the machine which was ultimately developed for the centrifugal pressure

casting process. The completed plate is shown in Fig. 5.

The drums already referred to, have an inside diameter equal to the diameter of the printing surface desired and the resulting curved plate needs no further reforming. The machine itself is designed to handle drums of different diameters (max. variation of 8 in.) thus providing a flexible unit.

Thoroughly Tested

It must be emphasized at this point that the development work on this process has not been conducted by rule-of-thumb or haphazard methods. It has been completely engineered and scientifically tested at every step and phase of its development. Tests have been made under possible conditions to determine proper drum speeds, pressures, pouring technique, metal and drum temperatures, running time, cooling methods, shell handling and complete metallurgical tests and examinations. From time to time sample plates were run on high speed rotary presses and their records carefully checked. Numerous plates have been tested for fidelity, register, proper bond and fatigue.

Plate Fatigue

In connection with the tests conducted, the results of the metallurgical examinations are of especial interest. It is a well known fact that all metals, after cooling from the molten state have a characteristic grain structure. One of the principal causes of failure in metallic machines, parts or pieces is from fatigue. This is generally construed to mean the failure of a material after repeated application of a load that the material would easily carry in one application. One can easily visualize the action of the high speed rotary press, where each time the printing plate comes into contact with the paper, a load is applied. This load is released as the plate passes over the paper. For the balance of the revolution of the cylinder the plate has no load other than the centrifugal force created by the rapid rotation of the cylinder. Incidentally, this load is not to be considered lightly. However, the alternate compression loading of the plate while printing, and the tension loading while the plate is subject to centrifugal force, creates opposite stresses in the printing plate, and is an excellent opportunity or source for fatigue failures.

Innumerable tests in many different industries have demonstrated that coarse grain metals have low resistance to impact and consequently are subject to premature failure from fatigue.

Static and Centrifugal Cast Grain Size

In centrifugal pressure casting of electrotype plates, numerous metallographic examinations have shown the grain size to be inherently finer than the grain size of the flat or static cast plate. This is clearly evident in the photomicrographs shown under Figs. 6 and 7, at a magnification of 50 diam. Fatigue tests have verified the belief that the centrifugally cast plates are superior because of their finer grain size. By variations in the cooling rate, brought about by slight changes in speed, drum temperatures, etc., this grain size can be controlled to a great extent.

Another desirable feature of the centrifugally cast plate is the uniform distribution of the lead-tin-antimony mixture, or more properly called the eutectic mixture. In the photomicrographs (Figs. 6 and 7) this is represented by the lines appearing as grain boundaries. Dross or other impurities which may be present accidentally in the metal are forced to the back of the casting by the centrifugal force in the new plate, where they may be removed easily. In the flat cast plate they are to be found throughout the metal structure, usually lodged in the grain boundaries, where they can do the most harm.

Inclusions, voids or any discontinuity in the structure of a metal subjected to intermittent loading, readily become the nucleus of a series of small cracks, which propagate from the inclusion or void through the metal structure, with subsequent failure of the piece. Propagation of such cracks is more rapid through a coarse grained metal than through a finer grained metal, such as is produced in the centrifugal pressure cast printing plate.

All in all, the centrifugal action in casting a curved electrotype plate by this method has a desirable and refining effect on the metal.

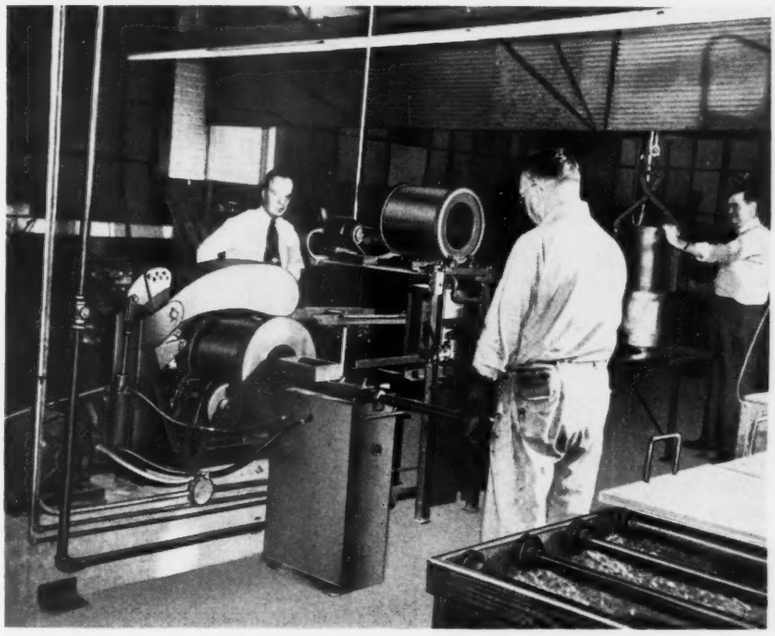


Fig. 4.—Pouring side of the centrifugal pressure curved electrotype plate casting machine in plant of the Capital City Printing Plate Co., Des Moines, Ia. Here, as in Fig. 3, one of the drums is being preheated on the separate stand previous to being placed in the casting machine. For this operation it is revolved on idler rolls over the gas burners by a separate motor drive. When the drum has reached a predetermined temperature it is lowered by an air lift and rolled onto the idler rollers in the machine.

The hood containing the friction drive has been lowered so that the driving pulley is in direct contact with the upper curvature of the drum's surface.

The journeyman at right is about to slide the ladle holding molten metal into the interior of the drum while the drum is rotating. The measured amount of metal in this ladle controls the thickness of the cast. For instance, 42 lbs. of molten metal produces a cylinder cast 12½ in. diam. and 0.220 in. thick, representing three complete magazine plates.

The drum is revolved by a 2 h.p. motor.

The metal solidifies in 30 sec., but is not ready to be released until the drum is rolled out to the air lift, which operation requires about 2 min.

Proper curvature of plates to fit different press cylinder diameters are obtained by changing drums. The curved electrotype shell is mounted on inside surface of open-end drum. Speed of drum rotation is 700 r.p.m. Casting temperature of backing metal is held at 650 deg. F.

Plate thickness may be controlled within a few thousandths of desired thickness by measurement of the metal pour.

Testing Centrifugal Plates for Fatigue Limit

In the preceding paragraphs emphasis has been laid on the fatigue characteristics of a metal and the probability of fatigue failures. In conducting the tests to determine the fatigue limit of plates cast with the centrifugal process, three test pieces were taken from each of 25 plates that had been made by centrifugal pressure casting. These pieces were machined to a suitable and uniform size for the fatigue test. This test was made by clamping one end of the specimen, and vibrating the free end of the specimen through an amplitude of 3/16 in. The plates from which these test pieces were

Shrinkage From Original Pattern
(Expressed in thousandths of an inch per foot)

Laminated Tenalite	Shell	Cast	Bump and Hand Finish	Plate Treat	Finished Plate
Average 9.9	12.8	36.6	32.1	23.2	22.5

taken had been made at different speeds of drum rotation, ranging from 300 r.p.m. to 875 r.p.m. Casting temperatures of the electrotype metal ranged from 590 deg. to 1085 deg. F. Comparison tests were made by the conventional flat cast and bend methods.

Although this data is tabulated it would be unfair to apply to regular curving practice until further research has reached the stage of completion.

While individual specimens showed a natural variation from the above averages, it is believed that the figures are of immense value.

A number of specimens of plates centrifugally cast plates were subjected to tensile strength test, also Brinell hardness and the results were exceedingly favorable over the conventional cast plates.

Every effort is being made to test the centrifugal pressure casting process in as exhaustive a manner as possible, and to determine each and every property that may affect the life and accuracy of the electrotype plates.

Dimensional Changes in Molds

Of essential interest to every plant manager, superintendent, workman, pressman and to the customer as well, are the dimensional changes occurring from the engraving to the finished electrotype, because they control the register of the separate plates in the multicolor printing process. To determine this characteristic, many tests have been made, using different engravings with Vinylite and Tenalite plastic for molding, with numerous different molding temperature combinations. Molds were also made using a special material formed by coating both sides of a thin aluminum sheet with Tenalite. The aluminum sheet being 0.005 in. thick, and the plastic on either side 0.020 in. thick. This material gives promise of being a satisfactory molding material. Early tests indicate a lesser shrinkage from the original.

Measurements of the dimensional changes were made with a cathetometer calibrated to 0.0004 in., using reference marks placed in each corner, at the midpoint of each side and end, and finally one near the center of each engraving.

Testing Plates Made by Usual Casting Process

Measurements have also been taken of electrotype plates made by the usual casting process at the several different operations. A summary of the measurements obtained on these plates, and expressed in thousandths of an inch, is shown in the following tabulation. Since all the measurements represent a shrinkage, the conventional minus prefix has been omitted. It is to be remembered that in obtaining proper registration the important factor is not the average amount of shrinkage, but the variation of dimensional change from one plate to another. The figures presented in the accompanying table indicate the possibility of such variations under present methods.

Direct comparison measurements for the centrifugal pressure cast plate cannot be made at the stations shown above. It will be recalled that in the centrifugal process, the printing plate is accurately cast to the proper thickness and radii of curvature in one operation, hence there is little possibility for ununiform shrinkage.

At the time of this writing electrotype shells have been made from the various molds selected, and are in the process of being made into printing plates. Some will undergo the regular casting and

Fig. 5.—Here is shown an electrotype plate cast in the machine shown in Fig. 3. The cast will be separated, shaved to thickness and trimmed after which it will be ready to be placed on the proof press cylinder for final inspection.

ESTIMATE MUST BE MET

(Abstracted from an Address, *Aptitude Tests for New Employees*, by Jack Klein, President of The Klein Institute for Aptitude Testing, Inc., New York, before NAPL Annual Convention, Cincinnati, September 1948.)

TO maintain morale, to keep personnel moving at high efficiency, the executive should have capacity to supervise others, to get along with others, to get work done by others. The executive must be able to meet the frustrations of every day work. In some shops, there are some employees who are gunning for each other. The question is: How will the executive meet such situations? Putting work through the shop depends upon time schedules of each department. Supposing one department holds things up and the other department has to wait. That may be deliberate on the part of the foreman or the people of one department or it may be beyond their control; nevertheless, the executive must know how to meet the situation.

Customers hold up proofs; customers fail to okay certain plates or fail to send certain essential parts of the job; or, at the last minute the customer makes too many changes. Or paper may fail to arrive on time. There may be a strike somewhere, and some needed supplies do not arrive. These hold back production, create turmoil, upset the organization, lead to losses. How will the executive meet these situations? Regardless of the difficulties involved, you can't fall down. You've got an estimate in there, and the estimate has to be met.

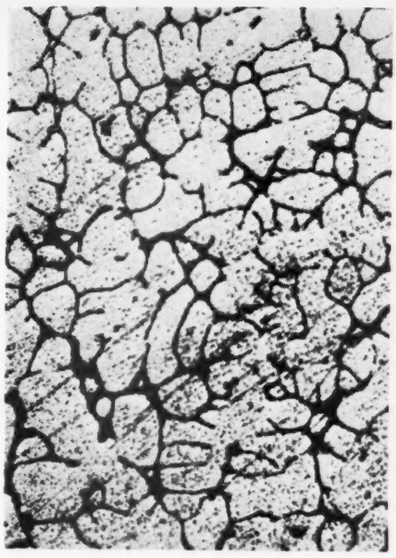


Fig. 6.—Section of electrotype plate backing. Static cast metal microstructure. Enlarged 50X.

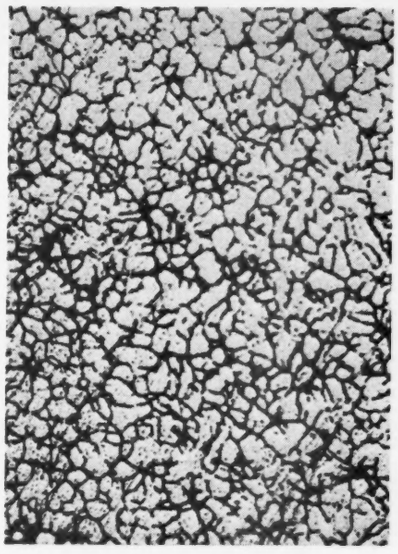


Fig. 7.—Section of electrotype plate backing. Centrifugal cast metal microstructure. Enlarged 50X.

bending procedures. Others will be cast centrifugally. Measurements will be taken at each operation to evaluate the dimensional changes during these steps in production. It appears at this time that there is little change between the mold and shell dimensions.

We believe that the centrifugal pressure casting process offers distinct advantages to the electrotyper and the trade as well. It produces a far superior plate not only faster, but at a saving in the element of time. These plates will print with greater fidelity, and through a special technique, accurate register in multiple color work is assured. It is anticipated that the first equipment will be installed at our plant in Des Moines, Ia., in a short time.

Naturally, we of the Capital City Printing Plate Co. are proud of our achievements, and we feel justly so. It has been our policy in the past and will continue to be in the future, to do everything possible for the advancement of the printing plate industry. Anyone interested in the centrifugal pressure casting process, may be assured he will be welcome to see the equipment in actual production.

Patents on the process and equipment are pending.

Acknowledgements

In conclusion, we wish to acknowledge the valuable assistance of technicians and contributors responsible for the success of this advantageous revolutionary process.

Robert R. Myers, jr., inventor

Nathan Janco, Centrifugal Casting Machine Co., Tulsa, Okla.

George Bickelhaupt, W.F.F. Thompson, The Monomelt Co., Minneapolis, Minn.

Dr. Frank Trimble, Midwest Research Institute, Kansas City, Mo.

Dr. R. R. Hancox, Midwest Research Institute, Kansas City, Mo.

Milo J. Stutzman, Metallurgist, Midwest Research Institute, Kansas City, Mo.

Herbert Libberton, Tenak Products Corp., Chicago, Ill.

Ed Duffie, Chemist, Meredith Pub. Co., Des Moines, Ia.

Jerry Stouffer, Russell Parish, Engineers. Meredith Publishing Co., Des Moines, Ia.

Enviable Employee Record Maintained By Cleveland's William Feather Co.

WILLIAM J. SCHNEIDER'S 25th anniversary as foreman of the pressroom of The William Feather Co., Cleveland commercial printers, was the week of December 22, 1948. Following custom, Schneider was presented with an engraved silver platter by William Feather, President. He was the fifteenth member of The William Feather Co. to be so honored. All but two of the 25-year employees are still with the organization. The 25-year people represent 20% of the total organization.

William J. Schneider's 25th anniversary as pressroom foreman with Cleveland's William Feather Printing Co., was observed in December.

Schneider started in the printing industry in 1889, working in many different cities while learning his trade. At the Sandusky (O.) *Journal*, he operated the first web press installed in that city. In succeeding years he was superintendent of the J. C. Hall Co. of Providence, R. I., and the Republic Bank Note Co. of Pittsburgh.

In 1927 and 1928 he was president of the Cleveland Club of Printing House Craftsmen. For 12 years he has been chairman of the Police Pension Board of Euclid, O.

He was born in Hamburg, Germany, in 1877, and came to the United States in 1886. He lives with his wife at 26836 Mallard Ave., Euclid, a Cleveland suburb. His son, Richard, has been employed in So. America for seven years.

The William Feather Co. bears an enviable reputation with respect to employee relationships. An executive stated that 32% of employees have been with the company more than 15 years, and 42% more than 10 years. In these figures are included the entire group of 75 employees—messengers, drivers and women office workers, in which categories there usually is a fast turnover.

The firm tries to offer the best possible working conditions. The lighting is modern. At least one porter is cleaning the place 24 hrs. per day, five days a week. William Feather has always operated a union plant. The firm negotiates annually with three unions.

"If our employee relations are considered good," said the company executive quoted above, "it is because the whole organization reflects the personality of William Feather. When something needs doing or when a situation involving possible unfairness develops, we move immediately to correct it without endless committee meetings and consultations with our lawyer."

Keeps Ink From Forming Skin

T. A. LOFTIS, owner of the City Printing Co., 117 S. Brevard St., Charlotte, N. C., uses a simple little kink to prevent ink from forming a skin in a partly used can. After taking out some ink from a can he fills the can with water, replacing the lid afterwards. The water keeps the ink soft and prevents skin forming. When more ink is wanted all that is necessary is to remove the top from the can, take out the amount of ink wanted and replace the top. The water doesn't harm the ink. This idea works well with inks such as are used on bond papers.

J. M. Huber Corp.'s Employee Benefit Plan

REACTION by executives of smaller companies, when shown employee benefit plans of larger companies, quite often is negative. The smaller company executive may remark with a shoulder shrug: "We can't afford anything like that." However, if an employee benefit plan is good for the large corporation it's also good for the smaller organization. The point is that while the large corporation may find benefit plans advantageous both from the company and employee standpoint, the smaller company may well pay some attention to the idea. The only difference, of course, is that the large company can afford an extensive program. In the case of small and large companies, there are so many little ideas that don't cost anything. Employees of all companies like to feel the company has some interest in them other than the primary one of securing maximum day's output from the individual worker. The major objective of any company should be to humanize itself as much as possible. We're not espousing paternalism or coddling in any manner, nor do we condone slow-down or slacker tactics by employees. Somewhere between these evils there is a middle ground upon which company and employee may operate if given the proper incentive under the wise leadership of company executives.

Speaking generally about small, medium and large businesses, this interest in employees need not be any more extensive than is permitted by management's resources. Much of it costs nothing. From that point on benefits can only be extended by funds available for the purpose.

This preamble has been leading up to comment about the Employee Benefit Plan sponsored by J. M. Huber Corp. of New York. Huber employs 1200 people in its plants located in New York, Texas, Colorado, Kansas, South Carolina, Georgia, Maine, New Jersey, Illinois, and Missouri. Principal products consist of crude oil, natural gas, natural gasoline, carbon black, kaolin clay, timber, and printing inks. J. M. Huber Corp. rates itself as a medium size business.

The J. M. Huber Corp., under the title *Employee Benefits*, recently published a complete analysis of the Plan in a booklet, 9 in. by 11½ in. size, bound loose leaf in durable flexible cover. Each employee is presented with a copy of the booklet which consists of some 27 pages.

Operations of the company are discussed and where its products are used. Nineteen benefits available to employees are explained clearly and in simple manner. Some of them are considered routine, such as death, funeral and injury benefits, severance pay, sick leave, unemployment insurance and social security. Others may be classified as unusual, such as the 18-hole golf course, playgrounds for children and tennis courts available to employees and their families in Borger, Tex.

Aside from the benefits enumerated above, perhaps the outstanding features of the Employee Benefit Plan are the Bonus and Profit-Sharing Plan and the Retirement Plan. Details of these two plans are discussed in a businesslike manner. Safeguards for both company and employee are stipulated.

In the section devoted to bonus and profit-sharing, it is explained that there are two major claims on the income of a business. The first is that employees receive fair wages and salaries. The second is that owners receive a fair return on the capital which they have invested. The Huber company feels that when a business has earnings over and beyond these claims such earnings should not all go to the owners, but that a division of extra profits should be made between the owners and the employees. Details of the plan cannot be discussed here but good times and bad times were taken into consideration in formulating the plan.

The booklet is well prepared and is written in dignified and friendly manner. It would seem that this booklet ought to be a prize possession in the home of every Huber employee. In it the company has been converted from an inanimate thing to a humanized personality.

BOOKS
RECEIVED

Modern Photoengraving

ALONG with other crafts in the Graphic Arts, the photoengraving craft has now grown up. This statement means that the highly technical photoengraving field hasn't had an up-to-date textbook for a long time. Technicians, management and mechanical executives, journeymen and apprentices will have frequent occasion to consult the book, *Modern Photoengraving*, by Louis Flader and J. S. Mertle. Not only has it been written for the man who more or less knows thoroughly the techniques and principles, but it has also been prepared for the executive who must have certain operations explained to him. Another thought is that consulting the book will be the means for preventing those who don't know from making foolish demands upon the engraver and consequently will keep costs within bounds. In many cases, if the book is used only as a reference source by executives in supervising plant operations it will serve an invaluable purpose.

In photoengraving is involved a rather complicated procedure since it employs chemistry, mathematics, optics, physics, mechanics, electricity and manual dexterity. The authors have intentionally omitted abstruse mathematical and chemical formulas and have explained in as simple language as possible these subjects to bring them within the understanding of the layman.

There are 18 chapters in the 376 page book together with 392 illustrations in black and color, the latter all made especially for the book. We're glad the authors found it expedient to use such a liberal amount of illustrations, if for no other reason than that they are of immense value in interpreting the text; another reason is that photoengraving is inseparable from text if the message is to be gotten across to the reader. All of the illustrations have been skilfully cropped and have been printed excellently. We imagine that without too much fuss all of the photoengravings were printed by an illustration-conscious pressroom executive.

Now, you're wondering what's in the book, we'll repeat—there are 18 chapters, segregated as follows:

Principles and Purpose of Photoengraving, 3 pages; Originals for Reproduction, 23 pages; Gallery Equipment, 34 pages; Negative Materials, 24 pages; Line Photography, 12 pages; Halftone Photography, 21 pages; Color Photography, 20 pages; Stripping, 7 pages; Photoprinting, 24 pages; Special Photoprinting Methods, 5 pages; Line Etching, 16 pages; Halftone Etching, 20 pages; Color Plate, 12 pages; Finishing, 9 pages; Machining and Mounting Plates, 14 pages; Proving, 13 pages; Weighing and Measuring, 7 pages; Process Hygiene, 14 pages.

There are 47 Tables of Data on Various Phases of Photoengraving.

There are 206 Chemical and Mathematical Formulas; for example, 15 on Gallery Equipment; 35 on Negative Material; 6 on Color Photography; 28 on Photoprinting, etc.

A Glossary defining 775 trade terms used in photoengraving and the graphic arts.

Forty pages of historical and introductory matter.

In addition to the Chapter Index, there is a cross-indexed General Subject Index of 16 pages. Other features add value to the book, but we won't mention them here.

It doesn't seem necessary to comment upon the reputation of the authors, Messrs. Flader and Mertle, but *Printing Equipment Engineer* feels they have done an exceedingly fine job. Critical comment seems unholy.

Modern Photoengraving — By Louis Flader and J. S. Mertle. Size, 8½ in. by 11 in. 376 pages printed on 70 lb. English finish paper to avoid glare. 392 illustrations in black and color. Bound in dark green DuPont Fabrikoid Imitation Spanish leather. Title stamped in gold. Text set in 10 pt. Century type. Price, $15 per copy, postage paid, Cash with order. May be secured through *Printing Equipment Engineer*, 1276 West Third St., Cleveland 13, Ohio.

Technology and Research

In commercial branch of printing industry given great boost at two-day meeting of PIA Research Committee with a number of invited guests.

By STAFF WRITER

ONE of the most important meetings ever to have been held by a technical group associated with the Graphic Arts industry occurred in Columbus, Ohio, on December 6 and 7. At this time, there was a meeting of the Research Committee of Printing Industry of America. (committee membership is 80) Including invited guests, there were approx. 260 persons present.

As a result of the two-day meeting, prominent men in the commercial printing industry composing PIA's Research Committee were highly impressed with the necessity for intensifying scientific research in order that the commercial branch of the industry will be able to keep step with progress and retain its rightful place in our national economy. Also, those attending the meeting decided to proceed with tentative plans for the organization of a commercial printing industry research coordinating society and the organization of an overall technical society. The latter society would encompass technical and research men in all branches of the Graphic Arts.

On Monday, December 6, Battelle Memorial Institute was host to the members and guests. Through its Graphic Arts Division, Battelle conducted a program during which its research achievements were discussed and demonstrated. The lectures, demonstrations and inspection tours through the Institute took up all of Monday.

At the Monday morning, December 6 session, Frank Pfeiffer, Chairman of the PIA Research Committee, opened the meeting. He is general manager of Reynolds & Reynolds Co., Dayton, Ohio. He introduced Dr. Clyde Williams, Director of Battelle. Dr. Williams stated that the printing industry is a $4 billion industry. As is the case with all other branches of industry in general, if management doesn't get results industry can't stay in business. If there is anything the nation needs in our present cockeyed economy, it is something to which it can cling in order to continue progress. It all boils down to the simple question: How can we develop new methods and processes in order to offset the rising costs of labor and materials? He stated briefly that recent progress in Graphic Arts research has been great and he is proud of the research accomplishments. He welcomed those present and complimented them upon their interest in continued progress of the industry through research objectives.

Reasons for Research

Chairman Pfeiffer, in responding to Dr. Williams' opening remarks, stated the commercial printing industry is still largely a hand-craft industry. Improvements in its methods and processes are not keeping up with the cost of its products. He hoped that the lectures and demonstrations would indicate the great need for research in his segment of the industry.

Magnitude of Work at Battelle

J. Homer Winkler, Technical Adviser to Battelle's Graphic Arts Div., stated that in order for the printing industry to reach its common objective it must work cooperatively in creating new developments for reducing manufacturing costs. He explained that Battelle employs over 1300 people, 1000 of whom are technical men. Its 1948 billing is in excess of $5 million for research activities. Every field of science with the exception of the medical field is represented in Battelle's work. In its Graphic Arts Division 42 people are employed, and for the year 1948 there will be a $350,000 billing for research projects. Some of its current work is being undertaken for Printing Plates Research, Inc.; Photoengravers' Research, Inc.; Gravure Research, Inc., and Book Manufacturers Institute, as well as a number of private objectives for industrial firms.

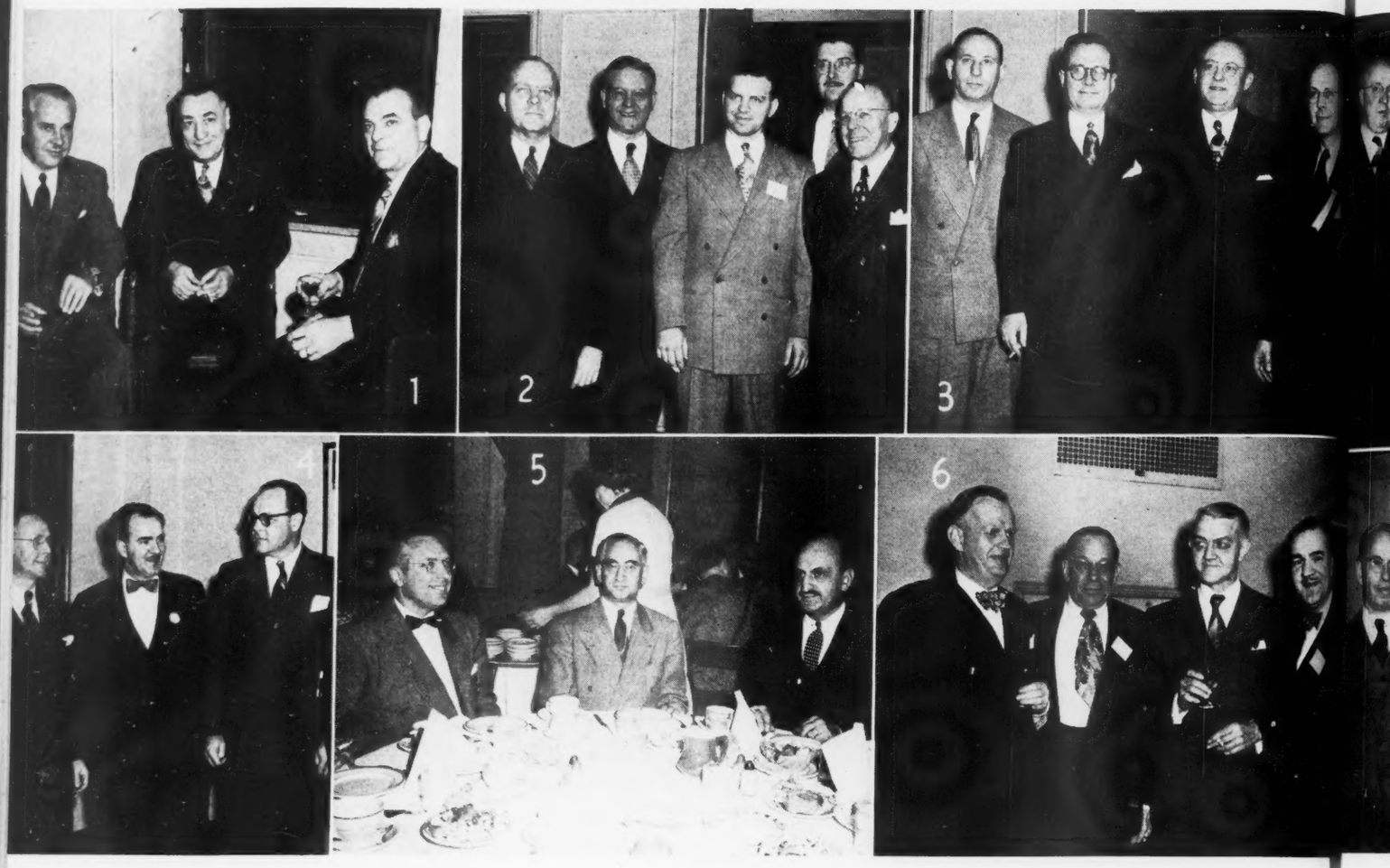
Plastic Molding

A NUMBER of lectures related to completed Graphic Arts research projects at Battelle were delivered by various members of the staff. First of these was M. F. Browning who discussed *Plastic Electrotype Molding*. This is an outstanding achievement. At the present time, nearly all members of Printing Plates Research, Inc., are using the method in addition to approx. 40 licensed companies. Briefly, the following operations occur: (1) Molding from the form under pressure into a relatively thin (0.030 in. thick) thermoplastic sheet during heat-softened condition, (2) Setting the molded sheet by cooling under pressure, (3) Making the surface of the mold electroconductive by spraying with silver solution, and (4) Depositing the shell in conventional manner. Benefits derived are elimination of use of graphite and wax which makes possible clean working conditions; bench operations related to preparing wax molds are not required; reproduction accuracy is claimed to be equal to that of lead molded subjects; less molding pressure; type, fine screen plates and wood mounted materials may be molded in combination; plastic molds may be stored indefinitely for future use; plastic molds mat be heat-softened and reused as a molding material; type distribution is simplified inasmuch as no graphite or wax adheres to the individual type characters or between the separate types.

Photoengraving Progress

RUSSELL L. DEUBNER delivered a paper which had been prepared by Dr. Luther E. Vaaler and himself. It was entitled *Improvements in Photoengraving Processes*. Results of this research work were given with permission of Photoengravers Research, Inc. There are 70 photoengraving company members in the U. S. and Canada.

The ideal etching process, said Mr. Deubner, is one that will etch straight down into the metal without any side undercutting, or color loss. In the course of the investigation, it became necessary to study thoroughly the ferric chloride and electrolytic etching procedures now being used for copper. Although information gleaned from research on ferric chloride has been helpful, work on elec-



New Development in Commercial Letterpress Branch of Graphic Arts — These Graphic Arts executives were present at joint PIA Research Committee and Battelle Memorial Institute meeting in Columbus, O., on December 6 and 7. On this occasion, Battelle was host. The attendance of approx. 262 personalities was representative of management, production mechanical and research departments in printing plants, as well as management, physicist, chemical and mechanical engineer people from equipment and supplier companies and Graphic Arts research organizations.

1.—H. S. Bowles, President, Sheldon Printing Corp.; Andrew J. Farr, Asst. Secy., Graphic Arts Assoc. of Illinois; R. W. Haas, Vice President, Sheldon Printing Corp., all of Chicago.

2.—William Wood, Chief Chemist, Harris-Seybold Co.; Herman Freund, Chief Engineer, Intertype Corporation; Charles D. Oughton, Battelle; C. H. Van Dusen, Chief Chemist, Addressograph-Multigraph Co.; Fred Hacker, Vice President, American Type Founders.

3.—M. S. Kantrowitz, Director, Laboratory Section, U. S. Government Printing Office, Washington, D. C.; Wade E. Griswold, Executive Director, Lithographic Technical Foundation, New York; Carl E. Dunnagan, President, PIA and President of Inland Press, Chicago; D. M. O'Donnell, Executive Committee, PIA.

4.—D. M. O'Donnell, President, Harper Engraving and Printing Co., Columbus, O. J. Homer Winkler, Technical Adviser, Battelle; Frank Pfeiffer, Chairman, PIA Research Committee.

5.—James J. Rudisill, General Manager, Rudisill & Co., Inc., Lancaster, Pa.; Joseph Chanko. Plant Manager, The Conde' Nast Press, Greenwich, Conn.; H. M. Fritz, Plant Manager, Wm. G. Johnston Co., Pittsburgh, Pa.

6.—Axel Lundbye, Engineer, J. W. Clement Co., Buffalo, N. Y.; Ralph Wetherbee, Manager, Springfield (O.) plant of Sam'l Bingham's Son Mfg. Co.; Dr. Ralph Sherman, Asst. Director and J. Homer Winkler, Technical Adviser, Graphic Arts Div., Battelle Memorial Institute, Columbus, Ohio.

trolytic etching has yielded the most significant and promising results.

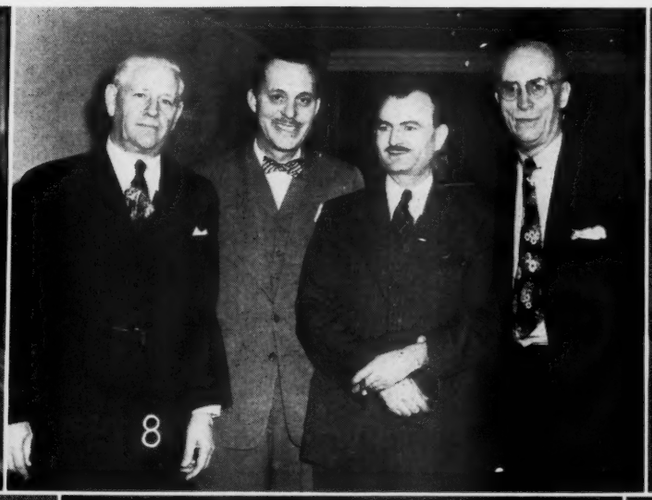
Methods of expressing and evaluating color loss in halftones, which occurred during etching, were devised. Visual comparison of initial and final dot area was used, and recently the use of a reflection densitometer has been yielding quicker and more accurate data on halftone image-area loss.

Ferric Chloride Results

The study of ferric chloride indicated that source of supply of the chemical, or its physical form, is not significant unless the hydrochloric acid content exceeds 0.25 per cent by weight, above which the enamel top failure is more likely. A concentration of 40 deg. Baume and a solution temperature of 90 deg. F. were found to be optimum for ferric chloride etching of copper engravings. The copper content of these solutions, which increases during etching, should range between 0.25 and 4.0 ounces per gallon, to obtain best etching results. The copper content of an etching solution may be quickly measured by means of a P.E.R. Copper Colorimeter, an instrument developed at Bettelle. The factors to control in ferric chloride etching of copper are the density, temperature, and copper content of the solution. By maintaining these conditions within the suggested values, a uniformity of speed and quality of etching results can be obtained. The maximum rate of etch and minimum color loss can be obtained by using the aforenamed conditions in tray etching, if the plate is held face down and not agitated during etching.

Electrolytic Etching

The study of electrolytic etching of copper has proven more interesting from a commercial standpoint. Sodium chlo-



7.—Reid Vance, Executive Director, Master Printers Federation of Ohio; G. L. Erikson, Vice President, Braden-Sutphin Ink Co.; Frank Pfeiffer, Chairman, PIA Research Committee, and General Manager of Reynolds & Reynolds Co., Dayton, Ohio.

8.—John W. Park, Production Manager, Chicago *Tribune;* John L. Reay, Vice President, Braden-Sutphin Ink Co.; Dr. R. M. Schaffert, Supervisor, Graphic Arts Div., Battelle Memorial Institute, Columbus, O.; MacD Sinclair, Editor, *Printing Equipment Engineer.*

9.—O. F. Duensing, Sales and Advertising Manager, Vandercook & Sons, Inc.; Bernard J. Taymans, Asst. General Manager, PIA; Russell J. Hogan, First Vice President, Intl. Assoc. of Printing House Craftsmen and Plant Manager of the Blanchard Press, New York.

10.—Raymond LeCraw, Consultant, U. S. Government Printing Office; P. L. Cole, Deputy Public Printer, and H. E. Aldridge, Army Publications Service, Washington, D. C.

11.—Elmer G. Voigt, Vice President, Western Printing & Litho Co., Racine, Wis. and James R. Brackett, General Manager, Printing Industry of America, pose amiably before camera.

12.—Since PIA's General Manager James R. Brackett (right) seemed to be everywhere all at one time, *Printing Equipment Engineer* asked him to pose a second time with Charles W. Pitkin, Doubleday & Co., Hanover, Pa.

ride (common salt) solutions are most commonly used because of their high conductivity, and the anode does not exhibit serious passivation until a rather high current density is reached. These factors permit very rapid etching of copper. Variables such as plate position, agitation, current density, salt concentration, solution pH, solution temperature, electrode spacing, and addition agents were investigated. The optimum conditions which arose from the work are as follows:

Plate position—vertical
Agitation—violent mechanical stirring
Current density—300-400 amps. sq. ft.
Salt concentration—saturated
Ammonium chloride—0.75-1.5 oz. gal.
pH—neutral (pH-7.0)
Temperature—70-80 deg. F.
Electrode spacing—2 in.

By adding ammonium chloride to the salt solution in the concentrations given above, faster etching and minimized color loss were obtained. Such a solution has been used to etch electrolytically 120-line engravings to printing depth in four minutes.

Some advantages inherent in electrolytic etching are:

1. It gives a more rapid, uniform etch with less color loss than ferric chloride splash etching.
2. The solution can be used continuously over a long period of time.
3. It is a clean operation.

Work is now in progress on a new method of etching, which may still further decrease color loss and have other specific advantages.

Bookbinding Progress

DR. DONALD J. BYERS presented a paper on *Hot-Melt Adhesives for Book Manufacturers* which was prepared by Samuel Terry and Dr. Byers. The paper was related to research work being conducted for The Book Manufacturers Institute. A moving picture showed the high speed mechanized operations of rounding, smashing and applying hot-melt adhesives to books in connection with conveyor methods in the plant of the Kingsport Press, Kingsport, Tenn.

Dr. Byers stated that the first objective of the program is to develop rapid-drying adhesives for edition binding, which will make possible the integration of gluing off, lining up, and casing in into a continuous, mechanized process.

Giegengack Outlines Exposition Plans

HON. A. E. GIEGENGACK, President of National Graphic Arts Expositions, Inc., outlined plans for the 1950 National Graphic Arts Exposition, at a directors meeting of the National Printing Equipment Association, Edgewater Beach Hotel, Chicago, October 21, 1948. The same report was presented to the member meeting of the Association on October 22.

Mr. Giegengack's statement as reported by Secretary James E. Bennet of the National Printing Equipment Association, is as follows:

"Mr. Giegengack's corporation has leased two floors in the International Amphitheatre, Chicago, for an exhibition of printing machinery to be held Sept. 11-23, 1950. The first floor has 143,000 sq. ft. which is nearly double the capacity occupied at the last exposition held in New York at the Grand Central Palace. They had taken an option on the second floor with 101,600 sq. ft. to take care of any over-flow that might be required, and also prevent any other exhibition being held in the building at the same time. This option can be abandoned about a month before the exhibition.

"Inasmuch as there was always difficulty in getting the exhibits erected and in running order before the doors were opened to the public, and as there always has been a great scramble to get the machinery out at the close of the exhibition, he had arranged that exhibitors could commence to install their machines on August 28 which is practically two weeks before the opening and the machinery can be removed any time from the 24th to the 30th of September.

"He stated that he had circularized organizations affiliated with the Graphic Arts Industry, suggesting that they hold their conventions in 1950 during the time of the exhibition, and had learned that the Printing Industry of America would hold its convention September 17 to 20, 1950 and had reserved 1000 rooms at the Palmer House. The International Association of Printing House Craftsmen will hold its convention September 10 to 13, 1950 at Hotel Stevens, Chicago, and has reserved 10000 rooms. The International Trade Composition Assoc. will hold its convention at Hotel Sheridan, September 14 to 16, 1950 and he had reason to believe that a number of the other associations would cooperate also.

"The International Amphitheatre provides room for parking about 4000 automobiles, and has a railroad siding. As the heavy machinery will all be installed on the ground floor there is no restriction as to weight. No contracts had been solicited as yet and probably nothing will be done along that line until the Summer of 1949, but the Exposition Corporation will probably meet in the Spring of 1949 to elect directors, officers and set up the details of procedure for the exhibition."

The greatest single deterrent to high-speed binding has always been the use of animal-glue adhesives. Depending on the weather, 2 to 48 hours are required for the glue to dry, before the book is ready for the next operation. These interruptions in processing require considerable manual handling, and the floor space needed to permit the glue to dry amounts to a significant portion of the total floor space of a bindery.

It was a logical step to develop an adhesive which contains no water. Hot-melt adhesives are mixtures of resins and plasticizers, which are applied at elevated temperatures and "dry" merely by cooling. There is no water in a hot-melt adhesive.

During the past two years, gluing-off edition binding with hot melts has been the principal target of the research. In order to follow the changes in properties which accompany the changes in formulation, two characteristics of the various melts were tested; namely, viscosity of the molten material in the temperature interval of 250 deg. F. to 350 deg. F., and the stress-strain diagram of thin films of the solidified material. Viscosity determines, to a large extent, the performance on the gluing machine and the penetration of the adhesive between the signatures. The nature of the stress-strain diagram indicates the strength and degree of elasticity of the hot melt. From this work has come Battelle Experimental Formula 3613-93 and its modifications. These hot melts are now in commercial use. More than half a million books have been made with hot melts in one bindery alone, and three other binderies are nearly ready to start regular production. The first commercial trials of hot-melt adhesives have been made at the Kingsport Press, Kingsport, Tenn.; The World Publishing Co., Cleveland; the American Book-Stratford Press, New York, N. Y.; and the W. B. Conkey Co., Hammond, Ind.

Among the desirable attributes of these adhesives are the following: (1) Satisfactory performance on the gluer. (2) Excellent penetration between signatures. (3) Very fast setting rate (less than 5 sec.) (4) No tendency to scuff off at the feed-in station or on the backing irons of the rounding and backing machine. (5) Shape into a good round and joint. (6) Can be prepared in the bindery at a relatively low cost.

Although these new thermoplastic adhesives were developed primarily for sewed edition binding, they have also been used successfully for perfect binding pocket-sized books and are nearly ready for commercial use on the new notched-style binding being developed by the World Publishing Co.

It is apparent from the progress to date that hot melts have cleared the way for high-speed production of books.

Xerography

DR. R. M. SCHAFFERT, Supervisor, Graphic Arts Div. of Battelle, presented a paper and demonstration of the new Xerographic process announced recently. (See November issue of *Printing Equipment Engineer* for illustrated article on process) He was assisted in the demonstration by Charles D. Oughton, Lewis E. Walkup, John J Rheinfrank, Harold E. Copley and Donald Fauser, all of Battelle's Graphic Arts Research group.

After lunch had been served at Presutti's restaurant, buses conveyed the visitors to Battelle's laboratories where small groups were conducted individually through all of the research laboratories, except, of course, those laboratories where the work being conducted is of a confidential nature.

Monday Night Meeting

ON Monday evening, December 6, the Ohio Printers' Federation was host to a cocktail party at the Deshler-Wallick hotel. Immediately following, dinner was served in the Hall of Mirrors. At this time, Don O'Donnell of O'Donnell Printing & Engraving Co., Columbus, served as toastmaster. After the introduction of prominent people, Carl E. Dunnagan, PIA President, gave a short address.

Mr. Dunnagan said, among other things, that new equipment involves a larger investment of capital per man. "The conservative printer," he said, "historically has resisted investment in machinery, recognizing that so long as he makes a profit on the labor he uses and does not invest too large an amount in machinery, he retains operating flexibility and can restrict his losses."

According to Mr. Dunnagan, "The figures on capital investment per man in the printing industry are rising sharply and in those plants which have been most successful, they have risen most sharply.

"Improved technology will be cheap at any price if it increases productivity

Appointed Member Research Committee

J. L. STACKHOUSE, Publisher of the Easton (Pa.) *Express*, has been appointed a member of the Mechanical Research Committee of the American Newspaper Publishers Association by President David W. Howe. Mr. Stackhouse served as Chairman of the Mechanical Committee when the research program was inaugurated. He fills a vacancy caused by the resignation of Capt. Charles H. Ruth, Washington (D. C.) *Star*.

William Baumrucker, jr., New York (N. Y.) *Daily News*, is Chairman of the Committee. The other members are Ralph R. Cranmer, Williamsport (Pa.) *Grit*; R. E. Lent, Jersey City (N. J.) *Journal* and John J. Shea, Hearst Newspapers, New York, N. Y.

to a level commensurate with higher equipment, materials and labor costs. Improved technology, leading to production of two, three, or four times present production, is the only possible major solution to the problem of paying higher wages and still printing at a profit without pricing the product out of the market."

The next speaker was Norman A. Imrie, Director of Program and Publicity, Ohio Dept. of Commerce, who presented a relaxing discourse—partly serious and partly humorous philosophy. An excellent address.

PIA Research Committee Meeting

CHAIRMAN Frank Pfeiffer, chairman of the PIA Research Committee, opened the meeting with suitable explanations of the intent and purpose of the meeting. In addition to a good many members of the Research Committee who were present, representatives from the research departments of manufacturer and printing plant organizations were in attendance, including a number of management representatives of manufacturer companies.

Chairman Pfeiffer briefly reviewed the necessity for scientific research in the letterpress division of the commercial printing industry. Up until within recent times, scientific research was a minor matter with respect to the commercial printing industry. Now, however, with various research organizations conducting work separately, he feels it is time to have some kind of coordination in the Graphic Arts industry so as to prevent duplication of research work and to coordinate the work to obtain accelerated results.

He called upon 20 research men, mechanical executive and manufacturer executives to comment upon the work being done by their organizations or their companies so as to obtain an overall picture of the present situation.

Dr. William C. Walker, director, National Printing Ink Research Institute, Chemistry Department, Lehigh University, Bethlehem, Pa., discussed the fairly recent establishment of printing ink research at Lehigh University. He stated that most of the work currently is being done by students and that a long-range program is being planned.

G. L. Erikson, Vice President and Chief Chemist of Braden-Sutphin Ink Co., Cleveland, described the establishment of a limited research group 15 years ago on an entirely voluntary basis. The chief chemists from a number of ink companies meet informally every two months to exchange ideas. While the group never has been publicized, the work with each other has been on a share your knowledge basis.

Dr. George Sears, Research Associate, The Institute of Paper Chemistry, Appleton, Wis., stated that the Institute's activities have been directed toward the inter-relation of paper and ink as well as the printing properties of paper. The Institute's broad interest and background in the wetting and penetration of paper by fluids of many kinds leads to the emphasis of paper-ink relationships.

Roy W. Prince, Asst. to C. M. Flint, Research Director, American Newspaper Publishers Association, reported the research department recently had set up a laboratory in Easton, Pa., to act as a control point for research projects and also to do some work of its own from a laboratory scale to a pre-production scale Up to the present time, some discussions have been had with equipment manufacturers. Time will be required to get the research activity functioning properly.

R. H. Simpson, of C. T. Dearing Printing Co., Louisville, Ky., said his firm was associated in cooperative gravure research but would refer discussion of the project to Battelle Memorial Institute.

Time's Interest in Research

It is somewhat unusual for a consumer to institute research in terms of the products it buys from its suppliers. **Roswell E. Fisher,** Coordinator of research for Time Incorporated explained Time's position in this respect.

First, Fisher pointed out that Time Inc. was a large buyer of printing ink and paper and its position was unique in this respect among the large publishers in that Time owned no paper mills, ink plants or printing establishments.

Fisher then went on to explain that Time has gone into Graphic Arts research in a substantial way for four reasons:

1. Time was not satisfied that the research being done by the industry was sufficient to meet its publishing requirements.

2. Because it was a contract buyer of printing ink and paper, Time felt that it should know more about the technology of their production as an aid in carrying out its buying policy.

3. Time Inc. hoped by its example to encourage the industry to spend more money and effort in the improvement of its machinery and processes leading to lower unit costs in terms of magazine production.

4. Time hoped that it might make a contribution to the technology which would be useful in the production of its own magazines and perhaps of general value to the industry, and Fisher stated that if such turned out to be the case, it was Time's present policy to make everything it invented generally available to the industry on reasonable terms.

The meeting was told that Time Inc. had over 30 projects 'in the works' in its two research laboratories located at Springdale, Conn., and Kalamazoo, Mich. It was stated that over 100 people were employed in this activity and that Time research was interesting itself in every important phase of magazine production from the time an editor said 'these words are ready to go to press' until the finished magazines reached the newsstands or the mailboxes of Time Inc. subscribers.

Fisher explained that the management of Time's research was based on the theory that "the best person to direct a research program was the researcher himself", and further that "it was wiser to spend money and effort to bring about a basic improvement leading to a large practical advance than it was to attempt to inch your way up the ladder in making minor improvements in basically unsound technology".

Fisher concluded his remarks by saying that Time Inc. had no idea that in the research field it could "pull itself up by its own boot straps", and from the beginning it had actively solicited and gotten important and generous assistance from "big time industrial research", Time's direct and indirect suppliers and others. Further, that while Time would naturally be proud of any of its achievements, it would show an equal interest and do what it could to assist in the success of the work of others.

(Continued on Next Page)

Employees' Suggestion Helps

PRESSROOM delays due to press carrier jams are a thing of the past at the Minneapolis *Star* and *Tribune*, the suggestion was made by machinist George Harris. Harris proposed that a stop switch be placed at the Scott press folder. The switch automatically stops the press when a jam produces a more-than-normal load on the carrier. Besides causing delays, previous carrier jams produced the danger of serious damage to equipment.

Charles W. Pitkin of Doubleday & Co., Inc., Hanover, Pa., stated his firm is interested in machine and process development rather than in fundamental research. Currently, the firm is interested in a method for eliminating sewing on books. This firm is also interested in process development of rubber printing plates.

Gene C. Meston, of Photoengravers Research, Inc. and who is also associated with the Capital City Printing Plate Co. in Des Moines, Ia., spoke about the photoengraving research which is currently in process at Battelle, by stating that his group is contributing to research in a small way for a large industry. Present research work is related to improved plate etching methods and tone control.

Joseph Schwartz, President, Printing Plates Research, Inc., said one of the objectives which had been accomplished by his organization was the PPR plastic molding process for electrotypes. His organization proposes to develop a printing plate of 75% less weight together with better printing qualities. This project is under way.

Manufacturers Will Cooperate

R. Verne Mitchell, President, National Printing Equipment Association, in speaking for all members of the Association, stated that their main objective is to help printing firms from a practical standpoint. One of the most important things in the printing industry is to secure cooperation as the obligation rests on all phases of the graphic arts industry to assist in reducing costs. He is not afraid of duplication of research projects in the industry for the reason that out of several duplicating activities the chance of finding the answer is increased. If any members of the PIA organization wish to come to Cleveland, they will be welcome and have the cooperation and facilities of the Harris - Seybold laboratory. He chided executives of those printing plants who, when they wish to buy a new press, want to trade in a 30-year-old press at an excessive allowance. This sort of trading does not increase the funds available for research. Proper depreciation of equipment will help to enable equipment manufacturers and printers to defray the expenses of research for the progressive advancement of the industry.

When called upon by Chairman Pfeiffer, **Kimball A. Loring** of The Machine Composition Co., Boston, said he wished Frank Sherman, Executive Secretary of the International Typographic Composition Association were present to speak for the Association. He stated members of the Association were interested in composition from IBM typewriters, Varitypers, and other forms of substitute composition. Some of the members of ITCA had already gone into the substitute typesetting business and are making offset plates. He stated ITCA had just recently established a research and development program and members had been asked to subscribe 50% of their annual dues to establish a research department. Later on, the Book Manufacturers Institute and Printing Industry of America would be asked to cooperate in this program.

Raymond H. Lecraw, Consultant on Methods and Procedures, Government Printing Office, Washington, D. C., stated that the GPO is devoting most of its efforts to methods development rather than in actual research. There is close cooperation between PIA and GPO. Up to date, 10 technical bulletins have been issued with respect to processes and operations in the printing industry.

Dow's Developmental Work

Harry E. Swayze, Research Engineer, Magnesium Laboratories, The Dow Chemical Co., Midland, Mich., presented a very good report about the Graphic Arts research activities of The Dow Chemical Co. Possible application of magnesium as a low-density castable alloy for stereotyping and electrotyping was briefly discussed. The photoengraving industry is taking rapidly to the use of magnesium as new engraving metal. Etching characteristics of magnesium in nitric acid are being studied to cut down area loss and to increase the depth in etching. Evaluation of the use of magnesium as a plate material for dry-relief offset is already under way.

He suggested the establishment of a national printing society and an associated monthly publication similar to the American Chemical Society and American Society for Metals. Annual awards for worth-while contributions to the advancement of the industry would be an incentive to publish important work.

Genesis of Council of Research Coordination

CHAIRMAN Pfeiffer discussed briefly the idea of forming a Council for Research Coordination in the Graphic Arts industries. After some comment by members of the committee present, it was decided unanimously the idea was sound and should be carried out. This would be an overall organization consisting of representatives from all research activities and would be formulated on a national basis. One of the activities would be to attempt to catalog all current research activities. At a later date Chairman Pfeiffer will announce appointments for a committee to proceed with the plan and to formulate a constitution and by-laws.

National Technical Society

CHAIRMAN Pfeiffer then brought up the idea of the establishment of a National Technical Society, one of the activities of which would be to publish a journal. Another activity of the Society would be to abstract current articles from all sources on technical phases of the industry. Michael Bruno of LTF spoke of the establishment of a Lithographic Technical Society last spring in Chicago. It was decided that perhaps the Lithographic Technical Society would be willing to merge into the larger overall society so as to make one effective technical group. In this way, duplication of effort would be avoided. It was brought out during the discussion that the printing industry as such has no publication at the moment with the exception of that published by TAPPI in which new developments can be announced. Chairman Pfeiffer proposed that suggestions for the forming of such a society be brought in at the next meeting of the PIA Research Committee.

Research Group Meets

The Technical Advisory Group of Gravure Research, Inc., met in Louisville, Ky., on December 14 and 15. The Group consists of the supervisory production executive of each member plant. Members of the group meet during the month of December each year. The function of this group is to keep informed concerning progress of research work being done at Battelle for Gravure Research, Inc., and to give such assistance and cooperation as is possible to direct the work into the most practicable direction and to obtain the greatest efficiency in plant operation from the application of the results. The group elected a Technical Advisory Committee consisting of six members from the group which meets at Battelle every three months and which reports back to the group membership.

Chairman of the Technical Advisory Committee is Oscar Smiel of Intaglio Service, Inc., New York. Other members of the group are: Edward Muhl, Chicago Rotoprint Co.; Matt Romano, Philadelphia *Inquirer*; Edward Infield, Art Gravure Corporation, Cleveland; Dr. M. C. Rogers, R. R. Donnelley & Sons, Chicago; John DeTurris, Art Gravure Corporation, New York.

Rogers and DeTurris were elected for a three-year term to this Committee at the December 14 meeting. The other four members carry over.

The meeting held sessions during the morning and afternoon of December 14, during which a detailed research progress report was presented by Drs. D. J. Byers and R. Dresdner and by Ralph Darby, all of Battelle. A number of the members of Gravure Research, Inc., attended as guests.

Members of the group were guests of the C. T. Dearing Printing Co. for luncheon on December 14, and guests of the Standard Gravure Corp. for luncheon on December 15.

The group visited the plant of the C. T. Dearing Printing Co. and the new plant of the Standard Gravure Corp. R. H. Simpson of the C. T. Dearing Printing Co. and M. George Martin of the Standard Gravure Corp. made all of the local arrangements for the meeting.

Aniline Printing Process

Principles of today's process and its utility—Print film of fluid ink on paper and other materials by means of rotary press, rubber plates and rubber design rolls

By PHILIP L. WALLACE*

**Rotary Printing Machinery Corp., Syracuse, N. Y.*

I.

ANILINE printing as it exists today, is a typically American achievement. It is the result of many years of painstaking labor and development involving men and materials associated with engineering and production in the Graphic Arts and Converting industries. While aniline printing is approximately 25 years old, its most rapid advancements and achievements have been made in the past 10 years.

EDITOR'S NOTE:

MR. WALLACE has been associated with the Graphic Arts industry, including the Converting field for the past 20 years. He has served as designer and consultant in the engineering of aniline printing presses and auxiliary equipment as well as in executive and administrative capacities. His practical experience and training in the Converting industry are reflected in the accompanying two-part article about the aniline printing process.

The aniline printing process came about at a time when the converting industry was in dire need of a faster and more economical method of web-to-web printing and decorating, not only to maintain its very existence, but as an aid to the expansion of the converting industry. Thus the process established itself in a highly specialized branch of the printing industry.

The aniline printing method is not entirely a departure from the conventional method of printing. In the process is combined a different approach with new materials (inks and plates), together with the necessary techniques required to accomplish the desired results.

Aniline printing can best be described as a process which prints a film of fluid ink on paper or other materials by means of a rotary press, web-to-web, using rubber plates and/or rubber design rolls. Its principles of operation are simple and its operating costs are economical.

Aniline Printed Products

While the aniline process was originally employed by the paper bag industry, it became popular as a means of producing beautiful printing on gift wraps, decorated papers, confectionary wraps, bread wraps, foils, cellophane, parchment and container board drinking cups, milk containers and ice cream cartons.

The most rapid strides in this field have been made since the war. The aniline process is now accepted for printing the transparent films so widely used in the packaging of food. It is being employed increasingly in the folding box and textile industries.

The prime purpose of this general outline is to familiarize the reader with the process. Thereby, those who are giving consideration to the introduction of the aniline method as part of their regular printing production, will have a better understanding of its technique.

In discussing the aniline process, the prime concern is the printing press itself; the ink and paper stock, and the basic application of each in relation to the operational function of the mechanisms involved.

Presses

Aniline presses vary to some extent in their function, their style of design and construction; but their ultimate utility basically is the same. The essential features of a good press are: Precision construction, Rigidity and Simplicity of operation.

The early aniline press was lightly constructed. This was adequate at the time, but there was a growing demand for greater printing speeds. Because of the light weight construction of the press, it became apparent that the greater the operating speed the more the press vibrated. This vibration, in turn, made it impossible to maintain accurate printing register. The modern aniline printing press is rigidly constructed with sufficient weight and strength to withstand stresses and strains at high operating speeds. The all-important adjusting mechanisms must be located at the operator's fingertips so that corrections can be made easily while the press is in operation. The aim of all press manufacturers is to build a unit that will operate with a high degree of efficiency and simplicity.

PHILIP L. WALLACE

It is well to emphasize here that aniline printing is done by a strictly rotary process. Basically, each printing station consists of an impression cylinder, a type cylinder, an ink feed cylinder (or furnishing roll) and a doctor (squeeze) roll. The operational function of each and their relation to one another, are explained as follows:

First, we have the impression cylinder which is constructed of steel tubing, ground to precision diameter and assembled with utmost accuracy. Its next component unit, the type cylinder, must be adjusted against the paper web as it passes between these two rollers when in operation. In certain specific requirements, the impression cylinder is covered with hard rubber stock.

A recent innovation has been the use of a precision steel rod (drill rod) of small

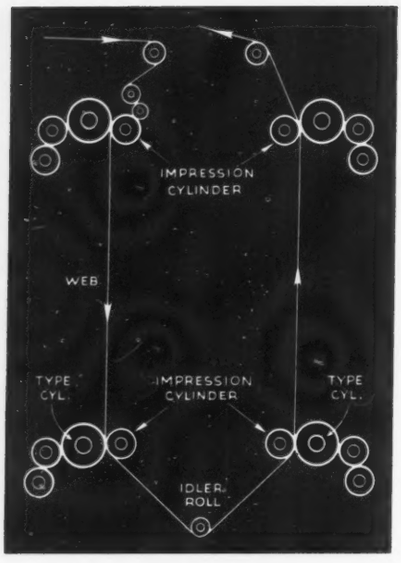


Fig. 1.—Diagram shows single unit impression method of rotary aniline printing.

diameter to be used as an impression means when printing on porous tissue stock. The impression area (line of impression) is reduced to a minimum by contact of the rod with the type cylinder, thereby helping to eliminate strike-through of penetrating inks on the paper, which sometimes happens in tissue printing operations.

The Impression is Relieved When Press Stops

The fluid-type inks used in aniline printing in some cases are tacky. Since the design is reproduced by proper impression of the type, or rubber plates, on the web through action of the impression cylinder, it is necessary to relieve the printing pressure when the press is stopped. Therefore, an automatic release mechanism actuating the impression cylinder or the type cylinder is necessary. Otherwise, adherance of the web to the rubber printing plate would take place when the press is again started, resulting in a broken web and requiring washup of the printing plate and splicing, or rethreading of the paper web. To overcome this necessary functional operation, the web must be released on all impressions simultaneously. On the modern press this is done by an air cylinder operating through a solenoid unit that is interlocked with the push button stations.

It should be mentioned that some presses are constructed with one impression cylinder for each printing unit, while other presses are designed with what is termed "opposed printing", *i.e.*, one impression cylinder with two printing stations opposite one another.

The type (plate) cylinder, which operates in relation to the impression cylinder, must be constructed with equal precision since the printing results obtained are greatly dependent upon its accuracy. Here again, various kinds are used but the type looked upon most favorably is the one-piece,rather than the shaft and core type. This method of construction gives definite rigidity and better means of holding precision in machining and grinding. Also, considerable time is saved in operation in removing shafts, not to mention the possibility of damage to shafts when not in use as well as the inaccuracies which usually occur when using the two-piece construction.

Printing Cylinder Flange Bearers

Printing cylinders with ground flange bearers are of utmost advantage and are incorporated on the more modern printing presses. The bearers are ground to the pitch diameter of the driving gear with proper tolerances allowed for impression of the rubber plates. They provide the operator with a faster setup means and give continuous and even impression without the bouncing effect on the rubber plates, particularly when spot printing is required.

Fastening Plates on Cylinder

The best known foundation for fastening plates is the ground surface cylinder with scribed-in horizontal and vertical division lines to aid in mounting the adhesive sticky back rubber type. When the run is finished, the plate can be removed and stored away for future use. The surface of the cylinder can be cleaned with a solution—usually benzol—to remove all trace of grease. The grease is detrimental to the adhering qualities of the sticky back rubber plate.

Printing Cylinder Diameters Vary

It must be emphasized that various sizes of printing cylinders, termed "repeat lengths," are used for various reasons. Some designs are produced by the artist whereby the continuous repeat of the particular design is fashioned by the size, or length, of the repeat circumference of the cylinder. This is customarily used in all-over designs such as gift wraps, decorated papers, etc. However, the size of the type (plate) cylinder, or repeat, when printing bread wraps, candy wraps, bag stock, etc., is governed by the length of the wrapper ultimately used on the package and this must be held to a given length. Consequently, the diameter of the type (plate) cylinder must vary to a considerable degree. The press is designed to easily accommodate this variation. It should be remembered that when various repeat cylinders are used, a like size driving gear must be made for each of these various diameters.

The modern aniline press is provided with means for registering printing, both vertically and horizontally,while the press is in motion. The impression adjustment of the printing cylinder is, of course, against the web stock and such adjustment must be calibrated to the finest degree of accuracy. Therefore, it is essential that the type (plate) cylinder be dynamically balanced and the anchorage of bearings must be so constructed that such fine adjustment can be accomplished and held at all printing speeds. Again, it is well to understand that this adjustment is of basic importance. In this process, the rubber type is merely impressed on the sheet with a kisslike impression. Any inaccuracies of the cylinder would be reflected in smearing or distortion of fine line type, thus resulting in plate wear and undesirable printing.

Ink Feed Roller and Doctor Roll

The ink feed unit, which distributes the ink on the rubber plates, operates in conjunction with the type cylinder and consists of the ink feed roller and the doctor roll. In modern aniline printing presses, two methods of distribution are widely used. They are the standard doctor roll system of ink distribution and the Anilox system of ink distribution. The standard method, which is the oldest form, is still used with excellent results. It is by far the most economical. This system consists of a rubber covered ink roller of proper hardness and, usually, a steel chrome plated doctor roll, both of which operate in the ink fountain. The pressure adjustment of the doctor roll allows the proper film of ink to be carried by the ink feed roller while the pressure exerted by the ink feed roller is governed by the amount of film and the type of ink required to properly distribute this ink on the rubber plates.

The Anilox Method

The Anilox method, on the other hand, consists of a steel roll, the surface of which is hobbed in screen or intaglio fashion, varying in size and depth from 85 lines, or dots, per inch to 185 lines. The control and distribution of ink is governed by the rubber covered doctor roller and occasionally a tempered steel doctor blade with oscillating movement is used for metering ink to the rubber plate. The principal reason for the introduction of of the Anilox method of ink distribution was to formulate a more controlled metering method of distributing the fluid ink. However, it is important to mention

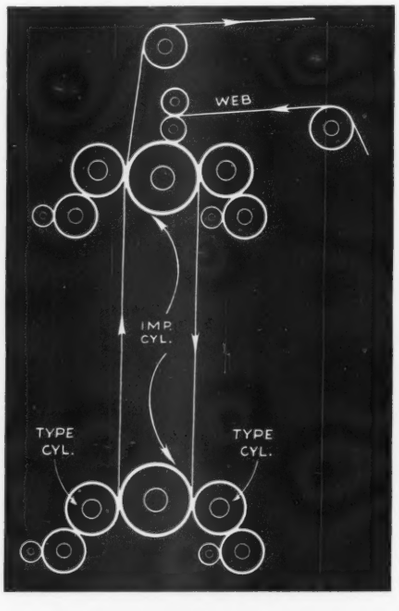


Fig. 2.—Diagram shows opposed printing method of rotary aniline process.

that the success of the Anilox method is dependent upon the type of printing to be done, together with the variation and depth specified in the hobbed roll.

Ink Fountains

The ink fountains are the detachable type with enclosed provisions. They are of light weight usually copper or bronze sheet metal construction to resist corrosive action and enable the cleaning operation to be accomplished more rapidly. Some fountains are equipped with pumps and proper overflow devices. During long runs, the operator is relieved of the responsibility of keeping the ink to the proper level and insuring an accurate degree of color control.

Continuous Motion Ink Mechanism

It is important to mention that on the modern printing press the ink feed roller unit operates in a continuous manner. The purpose of this feature is to keep the ink feed unit continually running, thus preventing the ink from drying on all rollers, including the type cylinder. To further explain this feature, it should be understood that when the press is stopped, all rollers would be stopped also. Since the ink is fluid and because it dries quickly, the ink on the rollers would also dry. Thus when the press is again started, the dried film on the rollers and on the type matter would cause a ridge or streak effect on the web where the ink dried on the roller. Therefore, continuous motion mechanism is incorporated to correct such a condition. This is usually accomplished by a separate drive means or by electronically controlled devices which operate in conjunction with the main drive, and does not function when the press is in full operation.

Web Control Important

Web-to-web printing is not considered a difficult task since press manufacturers have incorporated tested and proved mechanical ideas for their practical application. Men associated with converting problems often have advanced helpful ideas and it is only fitting to give credit to these men for their applied thoughts.

By proper control of the web, excellent registration is possible. Hence, the feed of the paper is of great importance. The web must be controlled throughout the operation. No slippage, over-feed, or under-feed of the web should be permitted to take place which would result in scuffing of the rubber plate and motion in the type cylinder, thereby creating inaccurate registration. Emphasis, therefore, should be given the draw roll unit which controls this important function. The web must be pulled from the parent roll, the weight of which diminishes as the roll gets smaller. Consequently, it must be drawn into the press continuously throughout the operation irrespective of the roll size and in such manner as to not affect the normal operation of the type (plate) cylinder. This positive in feeding of the web insures normalized tension throughout the printing stations. These draw roll units are built in various ways. It is not our purpose to deal with the merits of the individual draw roll units. We wish only to point out that this unit is all-important for good printing results.

Paper and Inks

Most types of paper are suitable to aniline printing. The thickness of the sheet (basis weight) is of little importance. The weight of paper which can be printed by this process may run from very light weight tissue up to and including container board. The different papers vary greatly in texture and finish. The type of ink used in relation to the paper being printed is of the utmost importance. Some inks dry at relatively high speeds without artificial drying. Other inks may require some means of artificial drying depending upon the type of ink in relation to the paper being printed. In some specific instances it may even be desirable to retard the fast drying action of the ink by the addition of a slow drying solvent.

While inks are a definite factor of importance to the success of aniline printing, they are, nevertheless, a factor which should not be of too great concern to the converter. Many ink manufacturing companies, whose chemists are constantly doing research work, are specialists in this line. They can offer the very best in advice and service on any ink problem.

(*To Be Continued*)

American Color Process Establishes New Plant

Equipped to produce lithographic plates and also to be operated as a litho laboratory, the American Color Process Co., a $125,000 division of American Greeting Publishers, Inc., Cleveland, began operations December 6, Irving I. Stone, vice president and creative head for the firm announced. The new company will produce full color litho-art and experiment with improvement of plates for American Greetings. Vice President Stone also announced that the engraving division's general manager will be Thomas P. Mahoney, production executive for American Greetings the past four years.

The plant's equipment is all new. It includes Monotype overhead lithographic cameras, also offset production presses which are to be used for proofing, stainless steel sinks temperature controlled to half a degree F., and line-up and artist tables.

Operations will include color separation, color correction and production of positive and proofing plates.

The new plant is expected to produce a substantial portion of American Greetings' plate needs for manufacturing more than 1 million greeting cards per day.

The expansion program has resulted in a growth from 92 employees in 1939 to more than 1500 at present. In that time facilities have increased from 20,000 sq. ft. to 412,000 sq. ft. or 9½ A.

THOS. P. MAHONEY

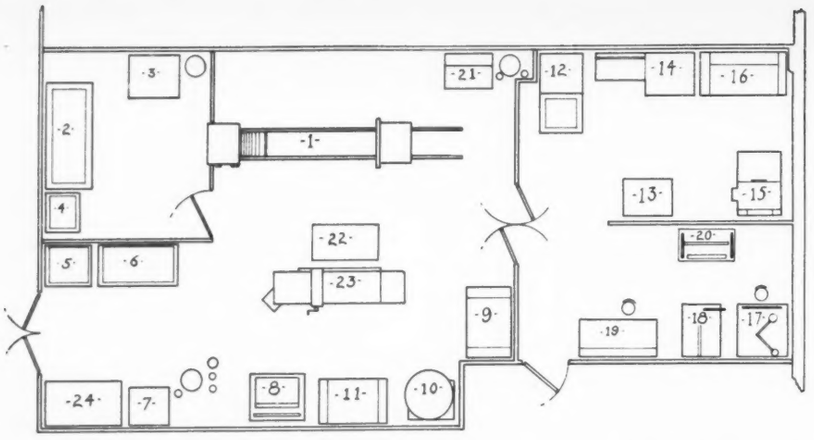
Mahoney, 40, has had 24 years experience in printing and litho-engraving. A native of Holyoke, Mass., he started as a printer's devil with Unity Press. Subsequently, he was superintendent of Whitlock Press in Middletown, N. Y. Following that he was manager of the decorating department of the New England Collapsible Tube Co., New London, Conn. Mahoney entered the greeting card field with White & Wyckoff, greetings manufacturers at Holyoke, where he was production manager for five years. He joined American Greetings in 1944.

Active in the International Association of Printing House Craftsmen, Mahoney this year is chairman of the Educational and Research Commission. He also is a member of the advancement committee of the Boy Scouts Council of Cleveland, a director-elect of the Litho Club of Cleveland and this fall was a member of the speakers committee of Cleveland's Community Chest. Married, Mahoney lives with his wife, son and two daughters in Lakewood, Cleveland suburb.

RIT Equipment Additions

THE Department of Publishing and Printing of the Rochester Institute of Technology has announced the addition of a Model 1250 Multilith and an Ozalid machine. These latest additions are another step toward a complete laboratory capable of reproducing copy by every known method. The Multilith will be used for instructional purposes and for plate testing in the camera division of the offset-lithographic laboratories. The Ozalid is to be utilized for making four color lithographic reproduction proofs.

Experimentally, copy prepared on the Vari-Typer, Justowriter and Fotosetter has been used in student publications.



PHOTOENGRAVING LABORATORY—The Department of Publishing and Printing, Rochester Institute of Technology, has completed installation of a photoengraving laboratory. Full newspaper page size plates on either zinc or magnesium can be produced with the equipment. Planning the installation began two years ago. The new laboratory is expected to serve as a testing ground for new developments by supply and equipment houses. Planning and installation is under direction of Ralph B. Tufts, Institute instructor.

Equipment items are identified in the above floor plan layout as follows:

1—Model J Chemco Roll-film Camera
2—Zenith Temperature Controlled Darkroom Sink
3—Stainless Steel Utility Sink
4—Robertson Negative Viewing Table
5—Chemco Temperature Controlled Stripping Sink
6—Chemco Stripping Table
7—Chemco Negative Drying Oven
8—Chemco Cold Grid Printer
9—Stainless Steel Sink for Metal Preparation
10—Chemco Plate Whirler
11—Stainless Steel Sink for Developing
12—Chemco Combination Infra-red Burning-in-Oven and Plate Cooler
13—Chemco Powdering Cabinet
14—Chemco Zinc Etching Machine
15—Powers Oldstyle Zinc Etching Machine
16—Stainless Steel Etching Room Sink
17—Richards Model PMR Radial Router
18—Richards Super Clipper Saw
19—Mounting and Finishing Workbench
20—Niagara Guillotine, 30 in.
21—Storage Cabinet
22—Copy Preparation Table
23—No. 219 Vandercook Proof Press
24—Desk

A miniature rotogravure proof press, shown in the above illustration, is used in the Chicago *Tribune* ink plant. Louie Yetter is plant superintendent. This laboratory type roto press, made for the *Tribune* by the Standard Process Corp., is designed with the same kind of ink fountain, copper etched design cylinder and rubber impression roller as one used on production presses. It is used to test various colors and textures of ink developed and manufactured at the ink plant. As little as a half gallon of ink can be mixed for testing purposes before actually making inks in quantity. The width of the paper is 8 in. The printing cylinder is 8½ in. wide and 4 in. diam. The printing cylinder was made especially for the press and is kept permanently in the press for test runs. Press is driven by a V belt from a ½ h.p. motor.

NPEA, Inc., Elects Officers

AT a meeting of the National Printing Equipment Association, Inc., held at Edgewater Beach Hotel, on Friday, October 22, 1948, five directors were chosen. These are as follows:

Donald C. Cottrell, C. B. Cottrell & Sons, Inc.

Philip P. Merrill, Ludlow Typograph Co.

R. Verne Mitchell, Harris-Seybold Co.

Oscar C. Roesen, Wood Newspaper Machinery Corp.

B. S. Hanson, Challenge Machinery Co.

The above directors were elected to serve for three-year terms, expiring with the annual meeting in 1951.

At the members' meeting, Harry L. Gage, Chairman of the NPEA, Inc., Educational Committee, introduced James J. Rudisill of Rudisill & Co., Inc., Printers and Lithographers of Lancaster, Pa., and Chairman of the Committee on Education of the Printing Industry of America; he also introduced Wade E. Griswold, Executive Director of Lithographic Technical Foundation, Inc.

Mr. Rudisill discussed the $150,000 educational program upon which PIA was working. Mr. Griswold outlined the work of LTF. Each speaker stressed the fact that printers and lithographers were bearing all expenses themselves rather than to call upon equipment manufacturers for assistance.

Immediately following adjournment of the members' meeting, the newly elected board of directors convened for the purpose of electing officers for a term of one year. The selections were as follows:

President—R. Verne Mitchell, Chairman of the Board, Harris-Seybold Co.

Vice President—Oscar C. Roesen, President, Wood Newspaper Machinery Corp.

Treasurer—Fred S. Tipson, President, T. W. and C. B. Sheridan Co.

Secretary—James E. Bennet.

The following executives were elected members of the Executive Committee: R. Verne Mitchell; Oscar Roesen; Harry G. Willnus, Vice President, Intertype Corporation; Fred S. Tipson; James E. Eddy, President, Miehle Printing Press and Mfg. Co.; James E. Bennet.

President Mitchell stated that at a previous meeting of the Board of Directors, the resignation of Harry L. Gage as director had been received, and that Martin M. Reed, President of Mergenthaler Linotype Co., had been unanimously elected to fill Mr. Gage's unexpired term.

President Mitchell appointed the following members of the NPEA Educational Committee: Chairman, Edward G. Williams, American Type Founders, Inc.; J. W. Kirkpatrick, Chandler & Price Co.; Gordon Montgomery, Miller Printing Machinery Co.; Carl Mellick, Miehle Printing Press & Mfg. Co.

EQUIPMENT & SUPPLIES

57 in. Hydraulic Cutter

NATIONAL Cutter Div. of the Frank M. Hill Machine Co. has announced production of a 57 in. hydraulic paper cutter. The clamp, the knife, and back-gauge are operated by hydraulic power. The principle of hydraulic to the clamp, states maker, is applied so that the pressure of the clamp may be regulated to suit the work. A dial registers the working pressure. The pressure can be regulated to hold light or embossed tissues without damage to the stock. At maximum pressure the clamp exerts a grip sufficient to hold the toughest board.

In addition to two-hand starting, the knife can be stopped at any point in the cutting cycle and the knife returns when pressure on the operating lever is released. The hydraulic control is such, it is claimed, that an accidental repeat is impossible.

The back-gauge is operated under hydraulic power by a lever located under the edge of the table. Lifting the lever moves the back-gauge back, while a downward thrust reverses the action. Manufacturer stated built-in illuminated tape magnifier facilitates positioning the back-gauge while a vernier scale on the hand wheel permits settings within 0.0075 in.

The chromed side table extensions, 20 in. by 40 in. are supported so as to avoid obstruction to the floor area and to permit the placing skids underneath. An automatic slot-closing device attached to the knife bar prevents spoilage on small cuts. A cutting-stick remover lifts the stick from its center without damage to its surface. Two outlets for electrical accessories are provided.

When changing knives a "quick-change knife-bar" makes the knife manageable for positioning. The knife is self-adjusting in relation to the cutting stick.

The base of the clamp is 5 in. wide Interlocking with the back-gauge, it permits a minimum cut of ¾ in.

Vertical cutting, by means of special knives for pinking, tabbing and cutting special shapes may be done on this machine.

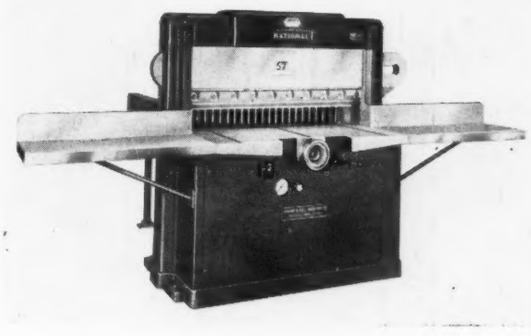
Premature Roller Fatigue

A PROCEDURE to extend the life of vulcanized-oil rollers has been offered in a bulletin issued by the Ideal Roller & Mfg. Co. The bulletin refers to Masterlith inking rollers which the manufacturer claims do not absorb inks and remain concentric and the same diameter throughout their life. The importance of light setting on the press and avoidance of pressure in washing up is stressed in the procedure for extending roller life. Plenty of kerosene, gasoline or benzine are the solvents suggested, should inks dry on the surface of the roller.

Three methods are given for removing dried ink film from a roller. The first of these is to apply a small amount of paste cleaner with a moistened cloth over the face of the roller. Allow to stand until dry and then rinse in clear water. The second is to use four tablespoons of household lye to a pint of tap water and dissolve. Lye solution is applied with pad of fine steel wool, rubbing surface of roller briskly until original color appears. Two or three applications may be necessary. The last method suggested is for use when the film of dried ink is thin. Rub the roller briskly with fine powdered pumice on a rag saturated with kerosene or denatured alcohol. If the film is heavy, use 2/0 garnet, sandpaper with kerosene to break the outer film and then proceed with pumice. The ends of rollers should be checked periodically for cracks and other defects.

G-E Register Control

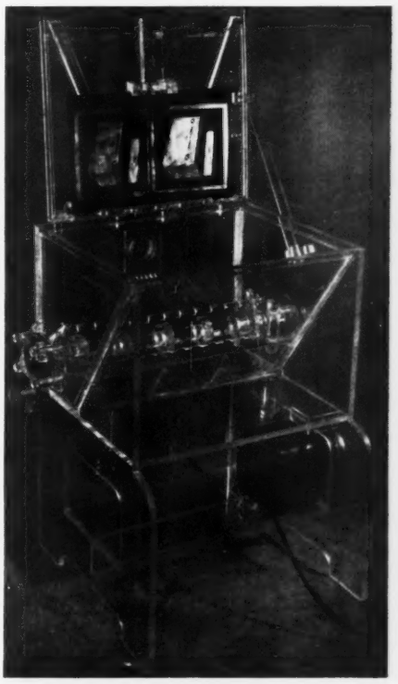
AUTOMATIC electronic register control equipment for multi-color printing is illustrated colorfully and described by General Electric Co. in an 8 page, 8½ in. by 11 in. bulletin. Applied to presses printing from the roll. Depending upon press construction, web or cylinder compensation is used. Ask for *GEA-5079, G-E Register Control.*



View of National 57 in. Hydraulic Cutter. Features are explained in accompanying article.

All Plastic Etcher

AN ETCHING machine constructed entirely of Du Pont plastic has been announced by The Devere Co. for photo engravers. The all plastic machine is principally a copper etcher, but can be used for zinc etching also, since the plastic resists etching acid corrosion. Manufacturer claims that halftone flats can be etched in approx. 2½ min. with little loss of color value, enabling the dots to assume a pyramid form for molding in wax, lead, or plastic.



The machine is 16 in. by 20 in. in size and has a capacity of 1½ gal. of acid. Can be attached to any 110 v. light socket. Further information may be obtained by addressing your request to The National Steel and Copper Plate Co. in care of *Printing Equipment Engineer.*

Rubber Electric Eye-Spots

RUBBER electric eye-spots of precise dimensions, designed as a convenience for the paper converter and as an aid to accurate printing cut-off control in connection with the use of sheeters on roll-feed presses, are now available from Moss-type Corp. The Eye-Spots are supplied in the form of rubber plates, each plate containing 12 spots of identical size. There is adequate background space around each spot to allow cutting apart and to facilitate mounting in the required position on the printing cylinder. Eye-Spot plates are made in seven sizes and are available in standard thicknesses with adhesive backing (0.125 in. thick), without adhesive backing (0.105 in. thick), or in special thicknesses where required. Spot sizes available are: ⅛ in. by ½ in., ⅛ in. by ¾ in., 3/16 in. by ½ in., 3/16 in. by ¾ in., ¼ in. by ½ in., ¼ in. by ¾ in., and ⅜ in. by ¾ in. Other sizes can be made on special order. Further information can be obtained by writing *Printing Equipment Engineer.*

Nolan Rocket Saw-Trimmer

NOLAN Corporation has announced the Rocket saw-trimmer featuring a ball-bearing mounted table. Work clamp handles slugs from 8 pt. to 42 picas. An aluminum saw guard, transparent unbreakable guard for use with plates and thumbguard on pica gauge compose the safety features of the machine. A positive-action non-slip screw, operated by a handwheel at the front of the machine, elevates the saw blade and locks it in the desired cutting position. The Rocket also features the protective cover which prevents clips from clogging the pica gauge screw operration. Standard accessories include a mitering attachment, hand line-up gauge, work clamp, precision pica gauge, trimmer-setting gauge, grinding wheel and chip buggy. Table top measures 22¼ in. by 24 in. and machine weighs 672 lbs. Further information may be secured from Nolan Corporation, in care of *Printing Equipment Engineer.*

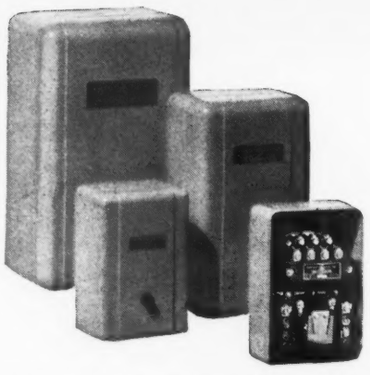
Upper section of Nolan Rocket, a self-contained cabinet model saw-trimmer for use in the composing room.

A.C. Magnetic Starters

A NEW line of a.c. magnetic starters has been announced by General Electric's Control Div. Designed for starting and protecting motors up to 50 h.p., the full-voltage starters are furnished in NEMA sizes from 0 through 3. The contactors can be furnished in NEMA sizes from 00 through 3. A feature of these starters is the one-piece plastic-encased coil enclosure which protects the windings against dirt, moisture, or possible damage during installation. The clamp-type coil terminals are embedded to prevent loosening. Self-lubricated vertical slots are contained in the sides of the enclosure.

The silver contacts can be inspected, interchanged, and removed without the use of special tools. The high initial tip pressure of the contact springs helps to eliminate tip welding. An arc shield of cold-molded asbestos prevents arc-over between contacts. The silicon steel magnet is supplied with a permanent air gap in the surface to insure quick dropout. Steel parts are zinc plated.

Starters are furnished either open or mounted in general purpose, watertight, dust-tight, or hazardous atmosphere enclosures. The enclosures have rounded



corners and a corrosion-resistant finish. Additional information on these starters may be found in the bulletins, GEA-5153 and GEA-5154, available from the General Electric Co., Schenectady 5, N. Y.

History of Typefounding

COPIES of a new booklet on the history of type founding and printing equipment manufacturing in the United States can be had free on request to Thomas Roy Jones, president, ATF Incorporated, 200 Elmora Avenue, Elizabeth B, N. J.

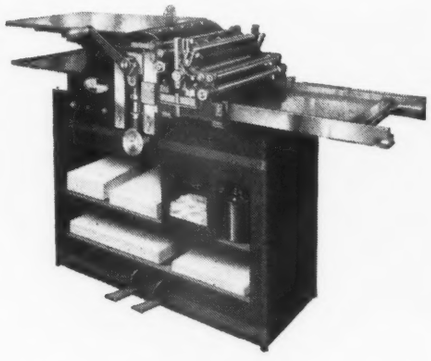
Specimen Book Supplement

DISTRIBUTION of its new 200-page Specimen Book Supplement is announced by Mergenthaler Linotype Co. The new book includes more than 130 faces in over 300 pt. sizes, as well as considerable new equipment in figures, fractions, special characters and decorative material for every purpose which have been produced since issuance of the Company's Comprehensive Specimen Book. While the Comprehensive Specimen Book was complete when published in 1939, new typographic developments produced in the intervening years have made the new Specimen Book Supplement necessary.

Style KP Proof Press

ADDING to the line of Series K proof presses, The Challenge Machinery Co. has announced the Style KP with automatic motorized inker. The revolving cylinder and reciprocating bed are operated by a hand crank with bed movement on anti-friction rollers. Sheets are fed to the cylinder grippers and a micrometer side guide. A foot trip prevents offset on the cylinder packing during the return stroke of the cylinder.

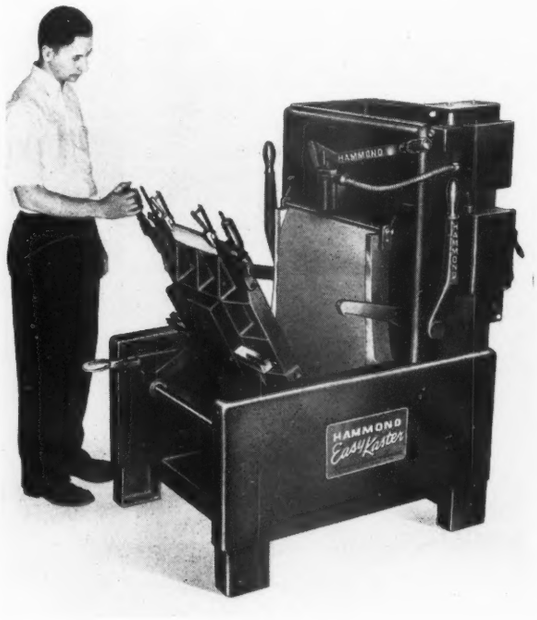
The inker is equipped with two 3 in. form rollers, a 2¾ in. steel vibrator, and



2¼ in. composition and 1 in. rider rollers. It is powered with 110 v. or 220 v., 60 cy., s.ph. a.c. motor, or with a 115 v. or 230 v., d.c. motor.

The Style KP is made in two sizes: No. 1528 (form size, 14½ in. by 23½ in.), and No. 2028 (form size, 19½ in. by 23½ in.). These models have a sliding feed board that moves back to give access to the cylinder packing, delivery board, zinc galley plate, and welded steel stand with shelves and compartments for paper, ink cans, and wipers.

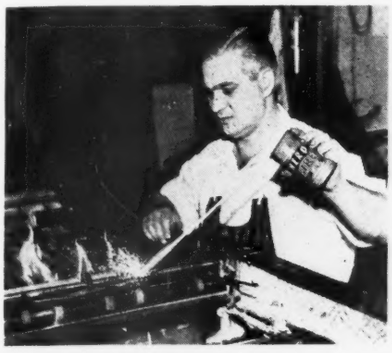
Further information may be obtained by writing The Challenge Machinery Co. in care of *Printing Equipment Engineer.*



Improved Hammond EasyKaster "8"—Shown above is the improved EK-8 for casting type-high and shell stereotypes, casting size 20 in. by 27 in., announced recently by Hammond Machinery Builders, Inc. Available for either gas or electric metal melting, the new model's specifications include floor space, 42 in. by 59 in., and net weight 950 lbs. Further information may be obtained by writing the manufacturer in care of *Printing Equipment Engineer.*

Portable Fire Extinguisher

ANNOUNCEMENT of a Hero 16 oz. portable, pressurized fire extinguisher has been made by Bostwick Laboratories. Hermetically sealed, the extinguisher cannot leak and requires no refilling or inspections. Operation is by pulling a trigger and aiming the 18 ft. pressurized stream at the fire. Manufacturer states Hero puts out gasoline, fuel, oil, paper, grease, electrical and all types of incipient fires in from 3 to 10 sec. Fluid meets Underwriter Laboratories specifications. It contains 90% carbon



tetrachloride and 10% other chemicals, with carbon dioxide as the propellant, and is claimed not to be injurious to persons and material it contacts. Available with wall bracket. Further information may be obtained by writing Bostwick Laboratories direct or *Printing Equipment Engineer* will gladly pass along your request.

Interchangeable Chisel

AMERICAN Publishers Supply, Inc. has announced a new stereotype plate hand finishing chisel. The chisel is equipped with five interchangeable blades (1/16 in., 1/8 in., 3/16 in., 1/4 in. and 5/16 in.). These interchangeable blades can be inserted in the steel handle

at the side and used as a "pistol grip" chisel, or the blades can be inserted at the end of the handle and the tool can be used as a conventional straight shank chisel. Extra blades and steel handles are available from the manufacturer. Further information may be obtained by writing APS direct or *Printing Equipment Engineer* will gladly pass along your request.

McCain Automatic Signature Feeder and Trimmer

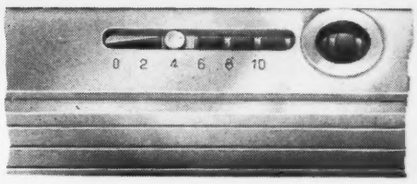
WITH the announcement of the McCain Automatic Signature Feeder and Trimmer, for which Dexter Folder Co. has been appointed sales agent, that corporation now offers an improved method of automatically feeding saddle stitched work on old and new Christensen Gang Stitchers. The McCain Automatic Signature Feeder and Trimmer, manufactured by the Chicago Machinery Laboratories, replaces manual feeding and trimming with an entirely automatic operation. The machine has been designed to feed a maximum signature of 11 in. by 16 in. down to a minimum of 6 in. by 9 in. A maximum lap of 1/4 in. is required on all signatures and the maximum recommended operating speed is at the rate of 125 signatures per minute. No tapes are used on the machine and the signature feeding is gripper controlled, insuring positive delivery. A caliper at each station guards against missing or feeding more than one signature at a time. The minimum feeding unit will be for two stations, and extra signature feeders may be had in units of two, three or four, as desired, so that practically any combination of signature feeders may be secured for various production jobs.

In conjunction with the McCain-Christensen combination, a trimmer for single book operation may be incorporated as an integral part of the equipment, if desired.

More information may be had by addressing the Dexter Folder Co.

Improved Hi-Speed Quoin

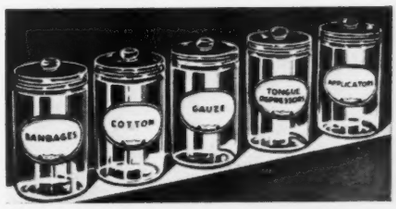
THE Challenge Machinery Co. has announced a new model Hi-Speed Quoin with an improved ball type lock and register indicator. Manufacturer claims the sturdier lock is constructed to give long wear with assurance that the quoin will not slip. The register indicator is designed for operation in showing the number of points the quoin



has expanded. The indicator is marked for expansion from 1 to 12 pts. The quoin is made of rust proof plated steel with working parts of tool steel. It is available in 3 in., 4 1/2 in., 6 in., 9 in., 10 1/2 in. and 12 in. lengths. It measures 48 pts. in width when closed and 60 pts. when expanded.

G-S Utility Jars

FOR cleanliness in the first aid station and infirmary, the General Scientific Equipment Co. recently announced a utility jar. The jars are to keep the most frequently used supplies, such as, cotton, gauze bandages, applicators and tongue depressors in an open location without danger of contamination. Made of crystal clear glass with



fused enamel labels unaffected by autoclaving, the amount of supplies in each container is visible at a glance. Each jar measures 7 in. high by 4 1/4 in. dia. Available with glass or chrome plated covers

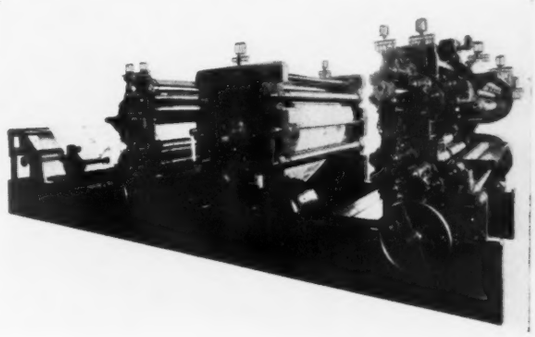
Kidder Oil Ink Multi-Color Rotary Press

FEATURING an interchangeable plate cylinder for use with rubber plates is the oil ink multi-color, multi-size rotary press recently announced by Kidder Press Co., Inc. It is available in two, three or four colors, and in widths of 42 in., 52 in. and 65 in. A choice of tensioning systems is offered in the press. These are: Reeves differential type of constant tension rewind and friction mill roll brake; the Linkbelt type; and the Kidder all-electric mill roll and rewind roll control. Infeed is by pinch roll and drum control.

The ink distribution system includes three large vibrators, two metal form rollers and five soft rollers. A continuous type fountain is used to give ink cut-up and distribution.

Plate cylinders are arranged with two colors on each rack, and when in printing position are around a single large impression cylinder. The press racks back two colors on each side, and the carriage is mounted on Timken roller bearings riding on hardened steel tracks. Bearings are bronze bushings throughout, and the Blanchard or Essex oiling systems are both available.

Further information can be obtained by writing the manufacturer direct or *Printing Equipment Engineer* will gladly pass along your request.



View of Kidder Oil Ink Multi-Color Rotary Press. Equipped with interchangeable plate cylinder for use with rubber plates.

Recent Goss Installations

THE St. Louis *Star-Times* recently installed two new Goss Multi-Color Headliner presses.

The presses are said to attain speeds of 60,000 per hour and are comprised of eight units and two pairs of folders. Presses are equipped with Goss tension plate lockup.

L. J. Chase is Production Manager of *The Star-Times*. V. Burger, pressroom foreman, explained that the presses are set on special spring mountings so that operating vibration is virtually eliminated.

Automatic pressure lubrication of all bearings and gear meshing points is provided by oil pumps on each side of the press. Ink misting is avoided by a continuous feed ink system. The presses provide for full color printing with reversing mechanisms to give one, two or three colors and black in many positions throughout the newspaper.

Another recent installation was 16 Multi-Color Goss Headliners at the Louisville (Ky.) *Times* and *Courier-Journal*. One of the features of the new presses is Colortrol, which allows adjustment of ink flow and color tone from a single panel in the fountain mechanism. This provides for presetting of ink feed, and allows the simultaneous increase or decrease of ink flow to any number of columns. Color flexibility is provided by portable fountains. George Mitchell is Pressroom Superintendent for the *Times* and *Courier-Journal*, and Ray F. Carter, Day Press Foreman.

The Galveston (Texas) *Daily News-Tribune* recently installed a 32 page Goss Duplex Unitubular Press. The press is arranged as a twinned 16 page operation, with the arrangement enabling the use of one press or both presses by means of a clutch. A two-section paper can be obtained by associating the webs from folder to folder, and angle bars are provided to take the sheets from one press to the other for delivering a book fold product. C. C. Washburn is Pressroom Foreman at the *News-Tribune*.

Gadget

For Plain Perforating

MANY printing plants have numerous straight perforation jobs to do where no printing is to be done at the same time. L. L. Clawson, owner of the Clawson Printing Co., Holdenville, Okla., uses a little gadget that he devised himself for the perforating work.

The gadget is made of two pieces of 2 pica reglet of the required length of perforation. To the bottom of each of these two pieces of reglet he glued a piece of 12 pt. reglet, afterwards sawing off the projecting portion of the 12 pt. reglet. In reality, this gave Mr. Clawson a 2 pica reglet 12 pts. higher than the regular reglet.

Then to the top of each of the two picas of reglet he glued a piece of cork gasket such as used in the cylinder head of an automobile. Again all excess cork gasket material was trimmed off. This gave Mr. Clawson two reglets 12 pts. plus the thickness of the cork gasket higher than reglets.

The perforating rule is placed between these two prepared reglets with the perforating edge at the cork side of the reglets. This is locked in a chase in the usual way.

In making ready for the perforating job, Mr. Clawson uses a single draw sheet, putting under this a sheet of galvanized block tin. To make sure that the tympan paper will not cut and tear he first applies a thin coating of regular padding cement to the sheet of block tin. After placing it under the draw sheet he pulls the draw sheet tight, fastens it in place and presses it down on the padding compound-covered sheet of tin. It dries almost at once.

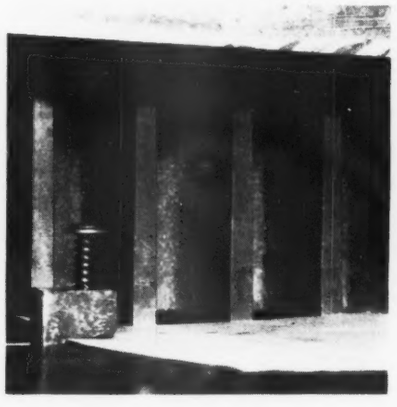
The job is fed in the regular way. In making ready, there is no need to provide additional squeeze. There is enough give to the cork to allow the perforating rule to make the perforations. And because of the springiness of the cork, the paper is pulled off the perforating rule when the pressure of the platen against the form is retracted.

Mr. Clawson has sets of these prepared reglets made up in the most used lengths so that whenever a perforating job comes through he generally has the proper length prepared. It is then only a case of taking the pair of prepared reglets, putting the required length of perforating rule between them, locking the assembly in the chase and proceeding with the job.

This idea can be used for die-cutting, substituting a cutting rule for the perforating rule and proceeding in the same way.

Sun Chemical Calendar

Consisting of 12 sheets printed on heavy white stock, 18 in. by 24 in. size, Geo. H. Morrill Div. of Sun Chemical Corp. has issued an attractive 1949 calendar. The design and colors used on this calendar tie in with Morrill's ink specimen book in which are demonstrated Morrill newspaper inks in web press colors. Each of the sheets is printed in three complementary colors and black. The figures used in the present-month calendar are 108 pt. for easy reading at a distance. The subsequent and past months are shown in smaller form on each sheet.



Inspection of one of the first copies off the St. Louis *Star - Times* new Goss Headliners is made by W. Wiedermer, assistant pressroom foreman, Fred C. Schoen, V. Burger, pressroom foreman, and L. J. Chase, production manager, in the usual left to right order.

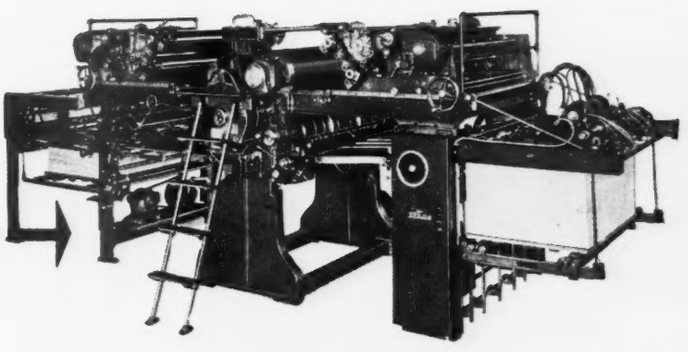
TURNS CUTTER INTO SEVERAL OTHER MACHINES—John R. Broughter, owner of the T-P Print Shop at Calvert, Tex., uses his paper cutter as a substitute for a paper punching machine, a round corner cutter, a perforating machine —without impairing its utility as a paper cutter. In the case of the T-P Print Shop, there isn't much of each type of work to come into the shop.

To do this he takes out the wood stick against which the cutter knife banks and substitutes whatever other tool he needs. For instance, as a paper punch he substitutes for the wood stick one or more punches as the job demands. He has mounted the punches on blocks of metal that fit into the groove where the wood stick is located. He does the same with a die to cut round corners.

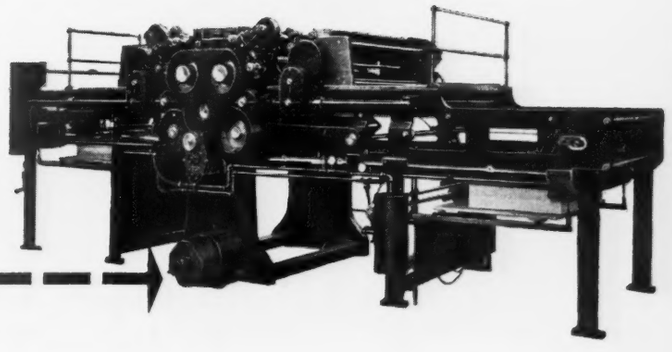
In using the paper cutter for other than cutting paper the clamp is operated by hand instead of power. There is sufficient power in the screw type clamp or the foot operated clamp to do the job. Mr. Brougher has punched up to 2 in. lifts of stock in this way.

FROM

EVERY



ANGLE . . .



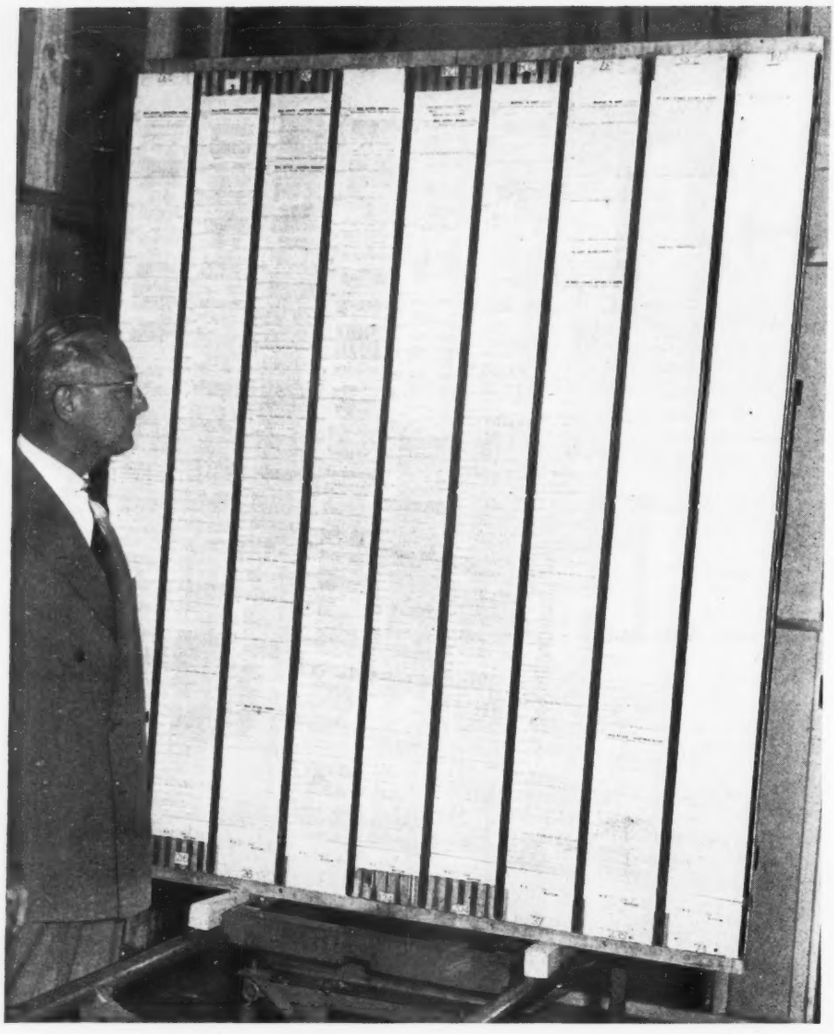
. . . THIS COTTRELL PRESS MEANS THE FINEST IN TWO-COLOR PRINTING

Yes, from every angle—speed, quality, maximum production, dependability, the Cottrell two-color rotary press will give the ultimate in two-color printing. This world-famous rotary press prints in two colors at speeds of 4500 or 5500 sheets per hour, depending upon the size of press used.

Cottrell

C. B. COTTRELL & SONS CO.

New York: 25 E. 26th St. • Claybourn Division: 3713 N. Humboldt Ave., Milwaukee, Wis.
Chicago: Daily News Bldg., 400 W. Madison St.
Smyth-Horne, Ltd., 13 Bedford Row, London W.C. 1, Eng.



This large board represents a 9 col. classified page of the Chicago *Tribune*. It occupies the position on the photoengravers' camera usually given over to the regular copyboard. When the madeup page copy is set up on the camera, the photoengraver can shoot the entire page in one exposure. The camera is fitted with a lens large enough to include the full page copy on a single negative. The classified type used at the *Tribune* is 12 pt. Electromatic Executive. It is typed on typewriter-like machines—on a special paper coated one side with iron powder. After the liner advertisements have been typed and proof read they are cut apart and arranged in proper classifications on the page. The person making up the page arranges the little pieces of paper coated reverse side with iron powder on the magnetic "saddles" arranged in column form. In the made up page, a space of 1⅜ in. is allowed between columns. Camera reduction is 50%.

Bell Rings When Distributor Stops

PLANTS using the Teletypesetter mechanism on typesetting machines, especially newspapers, experience the loss of composition time when the distributor stops. To minimize this loss of time, Walter Thiele, machinist with the Herald Pub. Co., Denison, Tex., developed an alarm system which sounds a bell when the distributor stops.

The gadget consists of an ordinary battery switch (single knife) mounted on an L-shape piece of iron (angle iron). The bracket fastened to the distributor frame of the machine under the clutch.

The device is fastened to the clutch lever so that when the distributor driving mechanism kicks out the latch of the switch will be tripped. There is a spring fastened to the latch which immediately pulls the latch in again and this causes a bell to ring.

The gadget is plugged into the regular circuit. The bell together with a transformer to step down the current is mounted to one side of the Intertype on which this gadget has been installed. On the front of the machine fastened to the sorts tray there is a switch for shutting off the current.

This shop has one line-composing machine equipped with Teletype setter mechanism while the rest of the machines are used for setting heads and ad copy. The operators go ahead and set type until the bell sounds when one of them leaves his work to remedy the distributor stop.

MLCo's Annual Report

Indicative of the evolutionary trends within the printing and publishing industry, the annual report of Martin M. Reed, President, shows that the company is fully aware of technological developments. With respect to these new developments, Mr. Reed states: "This has been a most healthy condition for the industry as a whole . . . Thoughtful research engineers and technicians . . . are of the opinion that certain technical difficulties in the new processes still remain unsolved or only partially solved, particularly insofar as economy and quality are concerned. On the other hand, it would take the thinking of a prejudiced mind to conclude that these problems will not be solved sooner or later. Progress, however, is likely to be evolutionary over a period of some years just as it was in the development of the Linotype machine itself. Our own research in these fields, some of it quite unconventional, is proceeding apace. Never in the history of Mergenthaler Linotype Co. have research and development activities been carried on with such intensity and on such a broad front as they are today."

Mr. Reed reports that production increased materially during the last fiscal period, particularly machine production. However, machine order backlog, because of high demand, has not decreased. Matrix service is back on a prewar basis with sales continuing at peak levels.

In a chart, the earnings after Federal income tax are stated to be $1,675,582.53. Dividends paid were $1,001,669.75 or $4.25 per share. Book value of outstanding stock is $27,204,291.42 or $115.43 per share.

In June 1948, William J. Flather, jr. was elected chairman of the board of directors and Martin M. Reed was selected president of the company. Mr. Reed previously had served as Assistant to former President J. T. Mackey, as legal consultant, secretary of the company and vice president successively. Because of poor health, Vice President Harry L. Gage resigned. He was succeeded by William H. Griffitn of San Francisco, who became director of sales.

Multi Perforation Work

SOMETIMES a shop will have a job with multiple perforation rules which are spaced too close to make it possible to run string from gripper to gripper on a platen press to pull off the perforated sheet after it has been perforated. Wm. T. Bradford, owner of the Wilson-Peace Printing Co., 234 N. Liberty St., Winston-Salem, N. C., gets jobs like this from time to time.

He fastened a piece of tympan paper to the grippers, letting it extend from one gripper to the other. Then he fed the stock to be perforated and let the perforation rules strike through the strip of tympan paper. The tympan paper bridged across the grippers served to pull the perforated stock from the perforating rules. The idea is applicable only to straight perforation jobs where no printing is to be done at the time the stock is perforated.

Meet the Newest Member of the Popular Linotype Spartans—

SPARTAN BOOK with **HEAVY**

5 WEIGHTS in the SPARTAN FAMILY:

LIGHT: Duplexed with **Medium** in 6- to 14-point sizes · How is one to assess and evaluate a type face in terms of its esthetic design? Why do the pace-makers in the art of printing rave over a specific face of type? What do they see in it? Why is it so

BOOK: The latest arrival, duplexed with **Heavy** in 6- to 24-point sizes · How is one to assess and evaluate a type face in terms of its esthetic design? Why do the pace-makers in the art of printing rave over a specific face of type? What

MEDIUM: Duplexed with *Italic* in 6 to 24 point, with display sizes to 36 point. Also duplexed with Light **in 6 to 14 point; and with Heavy in 6 to 24 point, with display sizes to 36 point · How is one to assess and evaluate a type face in terms**

HEAVY: Duplexed with *Italic* in 6 to 24 point, with a display range to 36 point. Also duplexed with Book **in 6 to 24 point; and with** Medium **in 6 to 24 point, with display sizes to 36 point · How is one to assess and eval-**

BLACK: Duplexed with *Italic* in 6 to 24 point, with a display range to 36 point · How is one to assess and evaluate a type face in terms of its esthetic design? Why do the pace-makers in the art of printing

The just-right weight, in between the Light and Medium, and duplexed with Spartan Heavy for utility and emphasis . . . and it's available in nine useful sizes: 6, 8, 9, 10, 11, 12, 14, 18 and 24 point. (Other weights available up to 36 point.)

The fashionable and smooth-reading type for tomorrow's printing—a face with plenty of eye-appeal. Note the smart style of both the cap and lower case alphabets:

A B C D E F G H I J K L M N O P Q R S
T U V W X Y Z & 1 2 3 4 5 6 7 8 9 0
a b c d e f g h i j k l m n o p q r s t u v w x y z

A B C D E F G H I J K L M N O P Q R S
T U V W X Y Z & 1 2 3 4 5 6 7 8 9 0
a b c d e f g h i j k l m n o p q r s t u v w x y z

TRADE LINOTYPE MARK

MERGENTHALER LINOTYPE COMPANY
BROOKLYN 5 · NEW YORK

Conference Dates *(with organization names and principal officers)*

American Photo-Engravers Association — 1949 convention to be held in San Francisco, date and meeting place to be announced later. Frank J. Schreiber, Commissioner, 166 W. Van Buren St., Chicago 4, Ill.

ANPA Mechanical Conference—Palmer House, Chicago, Monday, Tuesday and Wednesday, June 6, 7 and 8, 1949. Chairman of the Committee, Edwin H. Evers, Production Manager, St. Louis *Globe-Democrat*. Acting Manager ANPA Mechanical Dept., Vernon R. Spitaleri, 370 Lexington Ave., New York 17, N. Y.

Great Lakes Newspaper Mechanical Conference—Gibson Hotel, Cincinnati, January 16, 17, 18, 1949. President C. M. Kirk, Stereotype Supt., Detroit *News*; Secretary Al P. Oberg, Flint (Mich.) *Journal*.

Illinois Newspaper Mechanical Conference—1949 conference to be held in Danville, Ill., dates to be announced later. President, John Orlebeke, Danville (Ill.) *Commercial-News;* Secretary-Treasurer, Wilbur Augspurger, Peoria (Ill.) Newspapers, Inc.

International Association of Printing House Craftsmen—1949 Convention to be held in San Francisco, Palace Hotel, September 4, 5, 6, 7, 1949. President, Gradie Oakes, Process Color Plate Co., 522 So. Clinton St., Chicago 7. Executive Secretary, Pearl E. Oldt, 18 E. Fourth St., Cincinnati 2, Ohio.

International Typographic Composition Association—1949 Convention to be held at Hotel Statler, Boston, Mass., September 22, 23 and 24. Frederick H. Lutz, President, Brockton, Mass.; Frank M. Sherman, Executive Secretary, 1015 Chestnut St., Philadelphia 7, Pa.

Iowa Daily Newspaper Mechanical Conference— 1949 conference will be held in Mason City, Ia. Hotel and dates to be announced later. President, Ken I. Waughtal, Kayenay Engraving Co., Mason City, Ia.; Secretary, Paul F. Kamler, Mechanical Supt., Clinton (Ia.) *Herald*.

Kansas Newspaper Mechanical Conference — 1949 meeting to be held at Hotel Kansan, Topeka, Kan. President Vern Williams, Mechanical Supt., Topeka Newspaper Printing Co., Topeka, Kan.

Lithographers National Association— W. Floyd Maxwell, Executive Director, 420 Lexington Ave., New York 17, N. Y.

Missouri Newspaper Mechanical Conference — Hotel Conner, Joplin, Mo., in 1949, exact dates to be announced later. President, Paul S. Ginn, Press Foreman, Sedalia (Mo.) *Democrat-Capital;* Secretary-Treasurer, O. K. Hammitt, Mechanical Supt., Moberly (Mo.) *Monitor-Index*.

National Association of Litho Clubs — Mayflower Hotel, Washington, D. C., April 29-30, 1949. President, Albert Tucker, Sauls Lithograph Co., Washington, D. C.; Secretary William J. Stevens, 1776 Broadway, New York 19, N. Y.

National Association of Photo Lithographers — 1949 convention will be held at Hotel Statler, New York, N. Y., October 19, 20, 21 and 22. Executive Vice President, Walter E. Soderstrom. 317 West 45th St., New York 19, N. Y.; Executive Secretary, William J. Stevens, 317 West 45th St., New York 19, N. Y.

National Graphic Arts Education Association — John G. Henderson, President; Fred J. Hartman, Educational Director, 719 Fifteenth St., N. W., Washington 5, D. C.

National Graphic Arts Exposition—International Amphitheatre, Chicago, September 11 to September 23, 1950. National Graphic Arts Exposition, Inc., A. E. Giegengack, President. Fred W. Hoch, Secretary, 461 Eighth Ave., New York 1, N. Y. During the period, September 24 to October 7, 1950, a number of Graphic Arts associations will hold their annual conventions as follows: Intl. Assoc. of Printing House Craftsmen, Hotel Stevens, Sept. 10, 11, 12 and 13, 1950; Intl. Typographic Composition Assoc., Sheraton Hotel, Sept. 14, 15 and 16; Printing Industry of America, Palmer House, Sept. 17, 18, 19 and 20, 1950.

National Printing Equipment Association, Inc. — President, R. Verne Mitchell, Harris-Seybold Co., 4510 E. 71st St., Cleveland 5, O. James E. Bennet, Secretary, 140 Nassau St., New York 7, N. Y.

New England Mechanical Conference — President, George F. Marshall, Mechanical Supt., Portland (Me.) *Press-Herald-Express*. Secretary-Treasurer, Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day*.

Northwest Mechanical Conference — Hotel Radisson, Minneapolis, Minn., February 12, 13, 14, 1949. President, Chas. R. McGuire, Mechanical Supt., Minneapolis (Minn.) *Star* and *Tribune;* Secretary-Treasurer, Vernon G. Eck, 3725 Forth-eighth Ave., So., Minneapolis 6, Minn.

Pacific Mechanical Conference — Roosevelt Hotel, Hollywood, Calif., May 20, 21, 22, 1949. President, Harold Winn, Hollywood *Citizen-News;* Secretary for the North, Edw. N. Conley, color press foreman, San Francisco *Chronicle;* Secretary for the South, Fred J. Moyer, Los Angeles, *Daily News*.

Pacific Society of Printing House Craftsmen — Blair Lord, Secretary-Treasurer, 3650 Fairmount Blvd., Riverside, Calif.

PNPA-NJPA Joint Mechanical Conference — Penn Harris Hotel, Harrisburg, Pa., April 1 and 2, 1949. Paul V. Driscoll, Mechanical Supt., Connellsville (Pa.) *Courier*, Chairman of the PNPA Mechanical Committee is in charge of the arrangements. Thus the states of Pennsylvania and New Jersey will be represented by one conference; executives from Delaware and Maryland (which states have no conference) are also invited to participate in the joint meeting in Harrisburg.

Printing Industry of America — Hotel Biltmore, Los Angeles, November 14-17, 1949. James R. Brackett, General Manager, 719 Fifteenth St. N. W., Washington, D. C.

SNPA (Eastern Div.) Mechanical Conference—Chairman, Luther Wright, Mechanical Supt., New Orleans (La.) *Item;* Secretary, Tom Tanner, c–o SNPA, P.O. Box 1569, Chattanooga 1, Tenn.; Chairman of Supply and Equipment Group, Owen W. Asbell, Ludlow Typograph Co., representative in Atlanta, Ga.

SNPA (Western Div.) Mechanical Conference—Mayo Hotel, Tulsa, Okla., February 21 and 22, 1949. W. J. Dowell, Head Machinist, Newspaper Printing Corp., Tulsa, is General Chairman. C. W. Tabb, SNPA Executive Committee, 723 Texas Bank Bldg., Dallas, Tex., is Secretary. Chairman of the Supply Men's Committee is Don Malcolm, Dallas Representative, Burgess Cellulos Co., Freeport, Ill.

Southwestern Graphic Arts Conference—E. J. Deubner, Executive Secretary, 130 No. Volutsia Ave., Wichita 8, Kan.

HAND-I-FONTS

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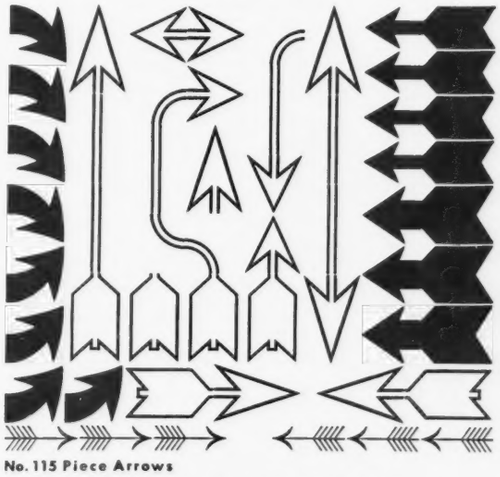

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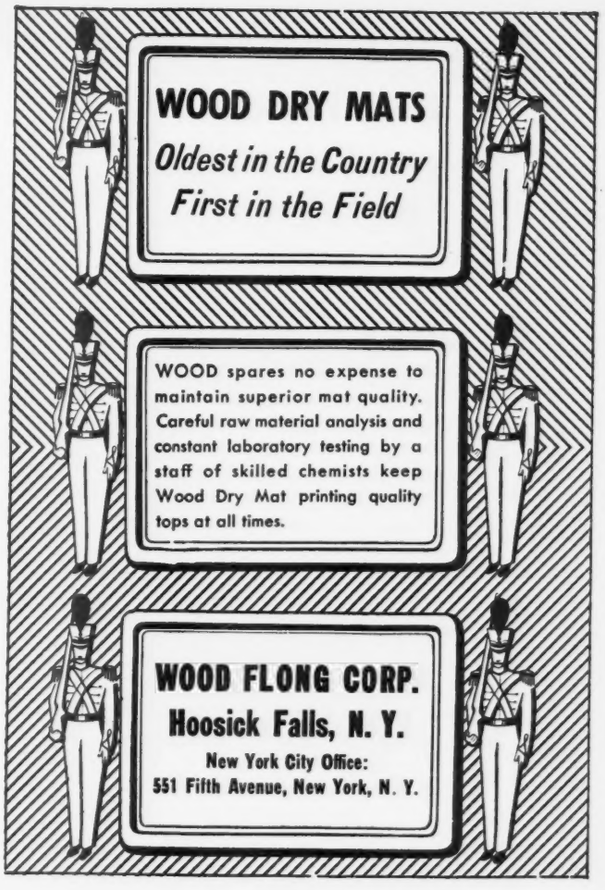
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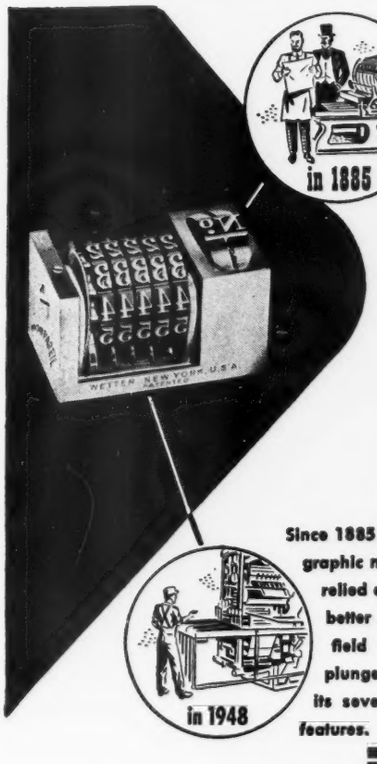

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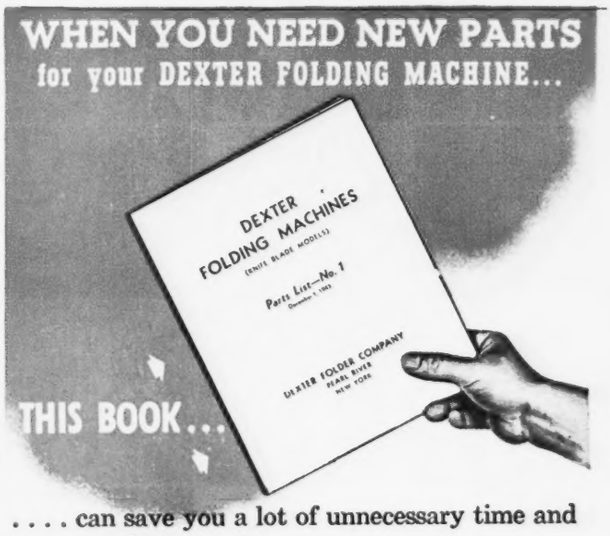

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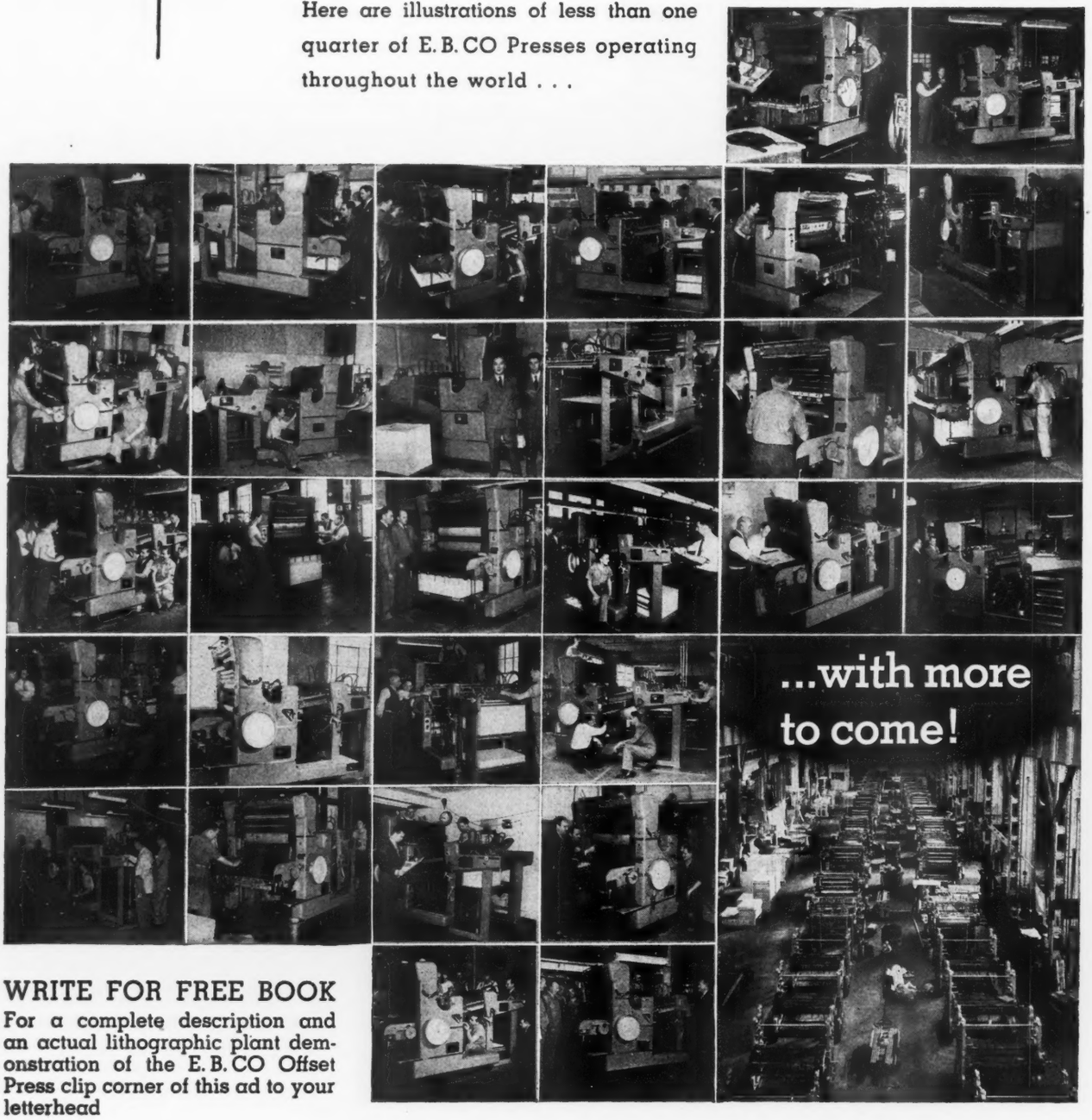

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New Tingue-Brown Plant Nears Completion — Rapidly nearing completion is the new factory of Tingue-Brown & Co. in Atlanta, Ga. Located on a plot 300 ft. by 650 ft. on Bishop St., N. W., the building's site is ideally situated on a hill overlooking the business section of the city. Constructed entirely of steel, concrete and glass and with a unique letter "T" architecture, the new plant incorporates the latest industrial engineering design features. This latest Tingue-Brown expansion more than doubles the floor space of the old plant. It is expected that the plant will be in full operation shortly after the first of the year. G. G. Sanborn, Assistant Vice President, will continue as Sales Manager of the Southern territory and General Manager of the new Atlanta plant. C. W. Clines will be his assistant.

62 Years a Printer

Toward the end of 1948, a group of fellow executives and their families honored J. Cliff Blanchard, President of Blanchard Press, Inc., New York City, N. Y., with a party at Hotel Pierre to mark his 50th year with the company. He was born in Augusta, N. J. in 1873. He learned to handle a stick and set type at the weekly Milford (Pa.) *Dispatch*. With another compositor, Oscar Welles, on Mondays, Tuesdays and Wednesdays, did the hand composition of the editorials, news texts and ads, and on Thursday morning at last late news items were set and the paper made up for the press. The "patent sides" furnished by the A. N. Kellogg Newspaper Co. were "set down" on Wednesday nights. By noon on Thursday, the presswork consisting of 500 copies per week was produced on a Washington hand press. The paper was then folded and mailed. On Friday the forms were put back on the stones and the editorial and news section type matter was distributed in the cases. On Friday, the miscellaneous orders for job work which had accumulated, were produced on a footpower job press. For the balance of Friday and Saturday there was little or no work to be done, this gave employees of the plant a chance to go fishing. In 1888 he settled down for a time in Arkansas, where he worked as compositor and production man on weeklies in Stuttgart, and on the *Monroe County Sun* in Clarendon. During an adventurous period of nine years, he did everything from learning to run a steam boiler and engine which furnished power for the presses, to a fling at publishing the Clarendon *Times*. He was also associated for a time with A. D. Matthews & Son in the publishing of the *Free Press*, one of the few Republican weeklies in Arkansas. Subsequently, Blanchard took a trip through Tennessee and Georgia, picking up odd jobs in print shops along the way. This saga ended with employment as a lumber hustler in a saw mill and a resultant jump via freight train and blind baggage back to Stuttgart, Ark., and the printing business. In 1897 he backtracked to Milford, Pa., where he worked a short time at his former job as compositor in the shop of the *Dispatch*. In February, 1898 he found work as a two-thirder in the composing room of the Isaac H. Blanchard Co. West Broadway, New York, N. Y., at $12 per 54-hour week. The next year the Blanchard firm was incorporated and moved to Canal Street.

J. C. Blanchard, President, BlanchardPress, Inc., observes 50th year with company.

He worked as a compositor and makeup man and as assistant to Henry Kanegsberg, assistant composing room foreman. (Mr. Kanegsberg is at present Secretary of Blanchard Press, Inc., with a record of 54 years with the company. Kenny remembers that Blanchard soon became known as a "swift" who could set 1000 ems per hour.) After several years in the shop, Blanchard was transferred to the office, where he learned estimating and job follow-through, and then broke in as a salesman. Selling proved to be his permanent niche from then on. Successively, he became sales manager, then secretary of the company. In 1919, when A. J. Brower became President Blanchard was elected treasurer. In 1924, he was elected president, a position he has held ever since. The "good old days," he'll tell you now, are fun to look back on, but he must confess that the music of a modern multicolor rotary press is fine.

A new Goss Duplex press, geared to turn out 24-page papers at 20,000 copies an hour, has been put into operation in the Waterville (Me.) *Morning Sentinel* plant.

The new press is the second to be installed in an expansion and equipment modernization program by the Guy Gannett Publishing Co., during the past six months. A new Hoe color-convertible press was put into operation in April in the publishing company's Gannett Building, Portland, Me., to print the Portland *Press Herald, Evening Express* and *Sunday Telegram*.

The press was installed under the direction of Daniel Brown of the company's plant in Battle Creek, Mich. Extensive building alterations were made under the supervision of C. Ralph Fitch, *Sentinel* mechanical superintendent.

In this illustration Press Foreman Henry Maxwell is shown on a catwalk of the new press.

Urges Early Reservations

Because of the continued housing situation those wishing to attend the Northwest Mechanical Conference at the Radisson Hotel, Minneapolis, Minn., on February 12, 13, and 14, are urged to make their hotel reservations well in advance of the meeting dates. The Committee reports that reservations are coming in good and feel confident that all reservations will be fullfilled if requested at an early date. It is suggested for those making reservations, that the Northwest Mechanical Conference be stated on the request.

EXECUTIVE ¶s

Ernest Payne, President of Payne & Craig Corp., has announced the addition of Dave Banks, Paul O'Brien and Frank W. Izzo to the firm's sales force. Banks, an alumnus of Northeastern University, spent two years as aerial photographer in the U. S. Marine Corps. He will work out of Boston covering New England territory. O'Brien is a graduate of Harvard College and served four years in the U. S. Army. Izzo majored in business administration at New York University from which he graduated.

Ralph C. Persons, General Manager, Geo. H. Morrill—General Printing Ink Div., Sun Chemical Corp., announces the retirement of Benjamin F. Bunn, Mr. Bunn has been an employee of the Morrill organization for 42 years, and is retiring from active participation so that he can spend his time in Florida. Morrill will continue to have the privilege of his years of experience in an advisory capacity. He is the last surviving employee who worked with Geo. H. Morrill, sr., one of the original founders of the company that developed news ink manufacture from the primitive vegetable kettle methods of 1840 toward the present modern daily capacity of more than half a million pounds. In a reminiscent mood, Mr. Bunn recalls the days when Morrill made its own gas for the production of carbon black, its own cooperage shop for the production of wooden barrels for shipping news inks. During an informal Christmas party of Morrill employees and Sun Chemical Corp. executives, Mr. Bunn was presented with a gold watch.

The Service Angle

Quality, states Wood Flong Corp., is recognized as the standard by which goods are purchased. However, in purchasing many commodities, the buyer also considers the service angle. When a newspaper or a commercial plant orders a case of stereotype dry mats, for instance, it is entitled to call upon the service department of Wood Flong Corp. for as much assistance as may be necessary. The product may be new to a particular buyer and may require handling in a slightly different manner in order to obtain maximum results.

In the case of Wood Flong Corp., that organization believes its stereotyper-service men are equipped to offer the necessary "know-how". Over the years, each representative has seen the company's products used under every conceivable condition and with all types of equipment. He is in a position to render invaluable gratis assistance because he knows the answers.

H. A. Porter, Vice President in charge of sales, Harris-Seybold Co., has announced the appointment of J. C. Dabney to the position of District Manager in charge of the Eastern District. Dabney joined the Seybold Division of the Company in 1939. Within a year he was made Div. Sales Manager and in

J. C. Dabney, appointed District Manager in charge of the Eastern District of the Harris-Seybold Co.

1944 he was brought to the General Offices in Cleveland as Assistant Manager of Sales. His predecessor in the Eastern District is J. W. Valiant, Vice President, now on leave due to illness. Upon his recovery, he will join the company's executive staff working directly with President George S. Dively.

Walter B. Patterson, Director of Advertising for Mergenthaler Linotype Co. and Vice President of Canadian Linotype, Ltd., has retired from full-time duty with the Linotype organization. His retirement has been prompted by reasons of health and the action was taken upon advice of his physician. Laughlin A. Campbell, recently returned from military service in Berlin and formerly engaged in sales promotion and advertising work in Detroit, has been appointed Manager of Sales Promotion and Advertising for Linotype. Mr. Campbell has a background of promotional experience commencing as technical writer in Service Promotion for the Canadian Chrysler Corp. after his graduation from the University of Toronto. From Canadian Chrysler he moved to Detroit as Sales Promotion and Assistant advertising Manager of Solventol Chemical Products Corp.

Announcement was recently made of the appointments of Arthur J. Frank and Edward S. Kottmyer as Vice Presidents and Jules L. Smith as Treasurer of The Wickersham Printing Co., Inc., Lancaster, Pa. Mr. Frank, who is active in the management of the business, joined Wickersham in 1922. Mr. Kottmyer, an authority on color printing, was with the York Printing Co. from 1930 to 1939 and then became associated with Rudisill and Smith Co. Mr. Smith, Wickersham's new treasurer, has been associated with the publishing and printing industry since 1919. He was connected with the York Printing Co. until 1939 when he became one of the incorporators of the Rudisill and Smith Co. He served as director, treasurer and production manager of this company and later as director of production with Everybody's Publishing Co.

Sun Chemical Corp. announces the appointment of John F. Devine, Assistant to the President, as chairman of its recently formed General Sales Committee. Other members of the committee are as follows: A. E. Horn, President of the A. C. Horn Co. Div.; Ernest Nathan, President of Warwick Chemical Co. Div.; William Recht, Chairman of the Graphic Arts Group (General Printing Ink); and Dr. William E. Holland, Sales Manager of Electro-Technical Products Div. This committee will develop and coordinate all sales, marketing and advertising activities of Sun and its divisions.

Dr. Frank B. Jewett, formerly chairman of the board, Bell Telephone Laboratories, and formerly president of the National Academy of Sciences, has accepted appointment as a member of the board of trustees of Battelle Institute, Columbus, O. Dr. Jewett will fill a vacancy created by the death of Dr. Rolland C. Allen, Cleveland industrialist. He has been the recipient of numerous scientific honors and service awards, including the Edison and Faraday medals and the government's Distinguished Service Medal and Medal of Merit.

DeWitt G. Manley, appointed Manager of ATF's Offset Press Sales Dept.

Kenneth R. Burchard, Manager of the Photomechanical Sales Dept. of American Type Founders Sales Corp.

It has been announced that Joseph P. Wronski, physicist, has joined the staff of Battelle Institute. He will be engaged in research in Graphic Arts technology. Mr. Wronski is a graduate of the University of Minnesota, from which he holds Bachelor's and Master's degrees. He has previously been associated with the Minnesota Mining and Mfg. Co. and

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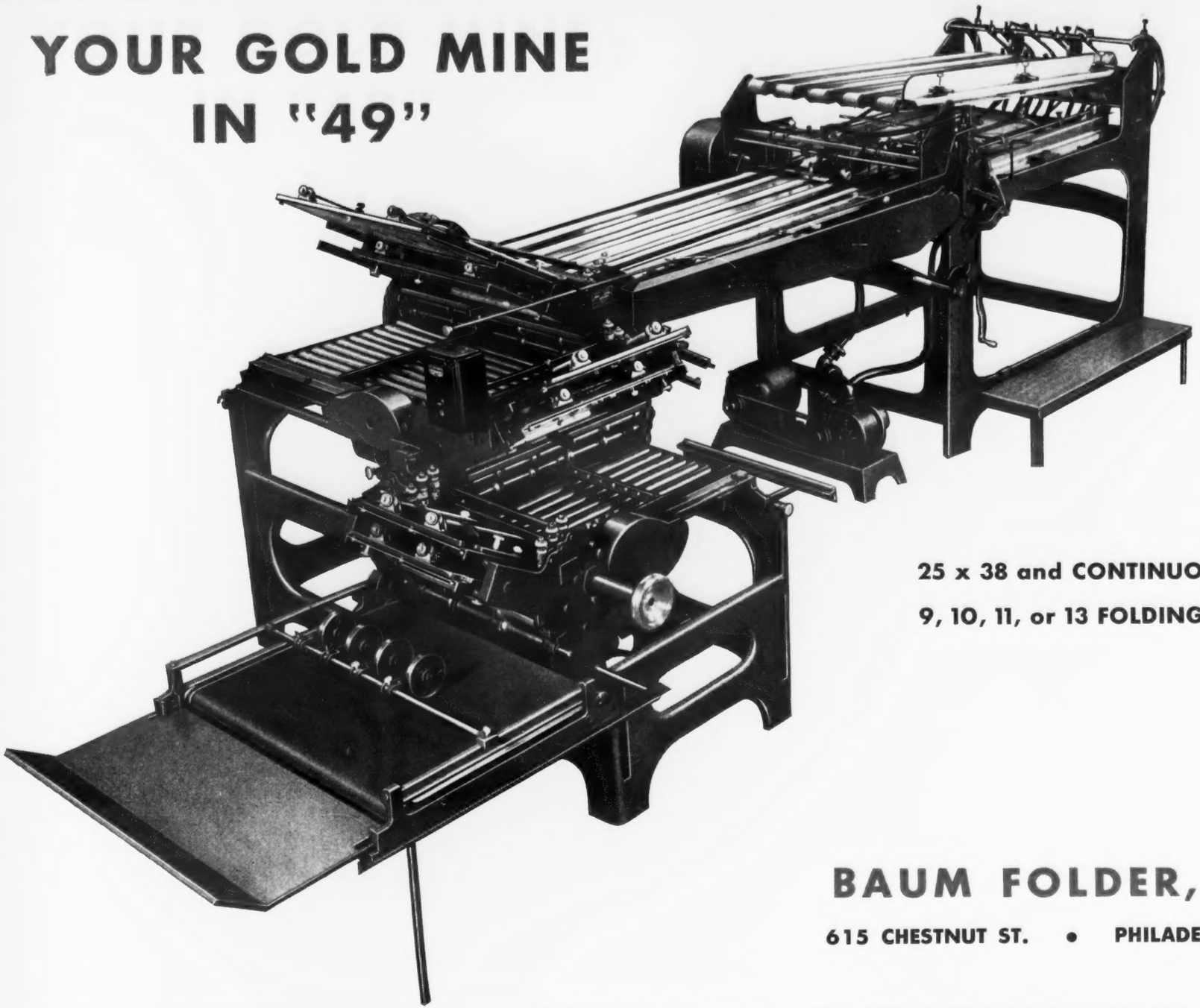

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with the Shell Oil Co. His technical affiliations include the American Physical Society.

Carl E. Dunnagan, president-elect of the Printing Industry of America and past president of the Graphic Arts Assoc. of Illinois, was honored at a testimonal dinner, November 22, in Chicago, with more than 400 persons prominent in the printing industry in attendance. A testimonial plaque was presented to Dunnagan by John J. Maher, president of the John Maher Printing Co., Chicago, in behalf of the Graphic Arts Assoc. of Illinois. Otto Bull, vice president and general manager of the Workman Mfg. Co., and third term president of the Association, presided.

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Craig R. Spicher, Sales Research Director for the Miehle Printing Press & Mfg. Co., recently spent one month at Carnegie Institute of Technology as visiting lecturer. Spicher joined the Tech faculty in 1915 as the first letterpress instructor and in 1919-20 served as head of the department. During his return to Carnegie, he lectured on *Fundamentals and Problems of Presswork*. A past president of the Chicago Club of Printing House Craftsmen, he is the author of *Practice of Press Work*, which has a wide circulation among printers.

Willard D. Smith has been appointed Assistant to the President of Pope & Gray, Inc., printing ink manufacturers, New York and Cleveland. His immediate duties will include contact with printers engaged in all types of letterpress and offset web printing. Mr. Smith has been an industrial consultant for the past 18 months, having also made studies of Europe printing methods. Before entering the consulting field, Mr. Smith was Executive Vice President of Fred'k H. Levey Co., Inc., and President of Levey's Canadian company.

Appointment of C. S. Gotwals as Quality Manager of all SKF Industries, Inc., plants has been announced. Gotwals has been associated with the company since 1915. He was instrumental in installing SKF's quality-control system during the war and served as chief of inspection and quality control prior to becoming superintendent of the main plant in Philadelphia in 1944. Charles R. Scott, Jr., in charge of the machining division since 1946, succeeds Gotwals as superintendent. W. F. Shedinger will direct operations of the machining divi-

(*Continued on Page 54*)

NAPL Convention and Exhibit

The National Association of Photo-Lithographers announces its 17th Annual Convention and Exhibit will be held in the Penntop of Hotel Statler, New York, N. Y. Exhibit contracts have been released and to date over 42 booths have been sold. This is expected to be the largest exhibit of lithographic equipment and supplies ever staged by NAPL. The Lithographic Craftsmen's Technical Session will be held on Saturday, October 22, 1949. The annual banquet will be held on Friday night in the main ballroom of Hotel Statler. Special features will be arranged for ladies attending the Convention. Room reservations should be made at once direct to the Hotel Statler stating that you are attending the National Association of Photo-Lithographers Convention.

Patents For The GRAPHIC ARTS FIELD

Covering patents issued October 26, November 2, November 9 and November 16.

All new patents for the Graphic Arts are reported exclusively for Printing Equipment Engineer by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issuing each week. Printing Equipment Engineer is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforation

During the four weeks covered by this report, no patents have been issued for this heading.

Composing Room Equipment

During the four weeks covered by this report, no patents have been issued for this heading.

Feeding, Folding, and Delivery

2,452,138. DEVICE FOR AUTOMATICALLY INSERTING MARKING STRIPS IN PILES OF SHEETS is primarily intended for use by printers to facilitate the counting of sheets as they fall from the printing press. The device for cutting off and inserting the strips of paper at predetermined periods comprises the provision of means for supporting a roll of paper, means for drawing the strip through the machine and for cutting the strip into predetermined lengths. Means for delivering and placing cut lengths comprises a fixed cutting blade and a coacting one mounted on an arm having a vertical movement and a partial horizontal rotary movement under the influence of a spring. The said means also embodies a provision for holding the severed strip and delivering it into the desired position. A pre-setting mechanism controls the sequence of movements and a plurality of electrical contacts actuated by the presetting mechanism serve to establish a circuit through a battery and electromagnets to regulate the periodic delivery of the strips. Invented by Laszlo Namenyi-Katz, London, England. Assigned to English Numbering Machines Limited, London, England. Application October 12, 1945, in Great Britain July 24, 1944. 4 claims.

Miscellaneous

2,452,755. COMPRESSED LAMINATED MACHINE ROLL. Invention provides a light weight, laminated wood roll with a small metal core. It is said to be the equivalent of conventional steel rolls but avoids weight disadvantages of the steel roll. The roll is made up of plywood blanks mounted on a steel shaft of small diameter. Blanks are compressed to form a dense annular body which may be machined and finished to a smooth surface. The course of the grain in the blanks is disposed transversely on the shaft. The roll is primarily for use in paper machinery but it is said to be well suited for use wherever large idler rolls are needed. Invented by Paul R. Heygel, Asheville, N. C. Assigned to Ecusta Paper Corp., New York, N. Y. Application June 19, 1945. 4 claims.

2,453,796. TEXTILE STEAMING OR AGEING MACHINE is particularly applicable for screen printed textile fabrics and has the advantage that the fabric is suspended vertically during the steaming process so that the steam has easy and even access to all parts of the fabric. This is particularly advantageous in ageing vat prints, aniline black discharges and all other colors where overheating of the fabric is not desirable. Machine consists of an antechamber inclined from the floor to the base of a main steaming chamber. A travelling chain or the like provided with hooks or pins by which the fabric is suspended along one selvedge traverses the fabric through the two chambers on a meandering path by which the fabric reaches the center of the chamber and reverses in such a manner that the portion of the fabric travelling inwardly will not contact the portion of the fabric travelling outwardly. Invented by

Daniel Boone

The men who blazed the trails of America, overcame greater odds than many people today may realize.

Early pioneers like Daniel Boone, Lewis and Clark and others, set forth on missions where starvation dogged their footsteps, and death by slow torture could be lurking in every thicket.

Like the deer, these men relied for safety on their highly developed instincts. Adventure was their stock in trade ... danger their daily bread.

Today, this country owes an everlasting debt to their fortitude and courage. For, the spirit of the pioneer plus the hard-won *freedom* of thought, speech and enterprise has resulted in the great and strong America we are proud to call our own.

And, even today, pioneering goes on ... in science, education, and in many industries. Let's keep that spirit ever alive in ours.

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Curt Jellinek, County of Glamorgan, Wales, now by judicial change of name Curtis Marcell Elliott. Unassigned. Application April 4, 1946, in Great Britain April 16, 1945. 2 claims.

Plate Making

2,454,188. PADDLE MEANS FOR SPRAYING. Machine, for the reception of different sizes of printing plates to be etched, delivers a fine spray of etching liquid over the plates. A "Lucite" window for observation is easily removed; the interior of the machine is accessible for repair and cleaning. The liquid is sprayed by means of paddles mounted in pairs and in a spiral formation on a rotatably supported and power operated shaft within a rectangular chamber of the machine. The shaft is located at one end of the chamber and the plate to be sprayed is suitably supported on a rack at the opposite end of the chamber. Each pair of paddles is positioned parallel across the shaft to form pockets between them and each paddle is mounted oppositely off-center. The projecting end of each paddle is perforated and curves inwardly toward the opposite parallel paddle. A fan carries off fumes. Invented by William Henry Legge, Winnipeg, Manitoba, Canada. Unassigned. Application March 1, 1946. 3 claims.

Printing Inks and Related Chemicals

2,452,043. DERIVATIVES OF SULFOSUCCINAMIC ACID. The compounds are N,N-di-substituted sulfosuccinamic acids, in the form of the di-monoethanolamine salts, in which one N-substituent, (i.e., one substituent attached to the amidic nitrogen) is a methyl group and the other N-substituent is an open-chain hydrocarbon radical having 10 to 18 carbon atoms, more particularly an alkyl hydrocarbon radical of 12 to 16 carbon atoms, and especially 12 to 14 carbon atoms. Higher N-alkyl groups are derived from mixtures of amines obtainable from coconut oil. Product can be used in concentrations of 0.1 percent to 2.0 percent for wetting and scouring raw cotton and wool, dispersing dyes in dyeing and printing preparations and applications, dispersing materials in the manufacture of finely-divided pigments, etc. Their pure forms are suitable ingredients for cosmetics, shampoos, etc. Products claimed include di-monoethanolamine N-methyl, N-lauryl-sulfosuccinamate, di-monoethanolamine N-methyl, N-cetyl-sulfosuccinamate, etc. Invented by Lawrence H. Flett, Scarsdale, N. Y. Assigned to Allied Chemical & Dye Corp., New York, N. Y. Application December 11, 1945, in Canada May 11, 1943. 5 claims.

2,452,171. METALLIZABLE MONOAZO DYES. The dyes made by coupling diazo compounds containing lake-forming groups with dihydroxy-napthalenes whose hydroxyl groups stand in beta-position, of which one is etherified, and wherein both ortho-positions with respect to the free hydroxyl group are unoccupied. Dyestuffs thus obtained are treated, if desired, with agents yielding metal. Dyestuffs can be used as pigment dyes, particularly however for dyeing and printing on cotton, rayon, wool, silk and leather. According to the process there are obtained, inter alia, dyestuffs which dye wool according to the usual chroming processes very fast olive, olive-green and gray shades. Invented by Fritz Straub, Kaiseraugst, Willy Widmer, Bottmingen, and Hermann Schneider, Riehen, Switzerland. Assigned to Ciba Limited, a Swiss firm. Application April 28, 1944, in Switzerland December 22, 1942. 4 claims.

2,452,313. PROLAMINE-BASE PROTEIN COMPOSITIONS. A plasticized prolamine composition comprises plasticized gliadin having, as the plasticizer, organic carboxylic amide substituted on the nitrogen atom with at least one alkyl radical containing an amine radical selected from the group consisting of $-NH_2$ and $=NH$ in such manner there may be used N-aminoethylbenzoic-amide, N-aminoethyloleic-amide and others. Among the uses of the plasticized compositions are their employment for casting and molding, impregnating and coating, particularly for grease and waterproofing purposes, metal coating, protective varnishes for printed and other paper surfaces, adhesives, etc. Carbon black and other pigments are used in examples. Invented by Willard L. Morgan, Columbus, and Carl R. Faelten, Clinton Township, Franklin County, Ohio. Assigned by direct and mesne assignments to American Maize-Products Co., New York, N. Y. Application March 5, 1945. 19 claims.

2,452,314 and 2,452,315. PLASTICIZED PROLAMINE-BASE PROTEIN COMPOSITIONS. The scope of these patents is similar to that of companion patent 2,452,313 and the novel feature of each

"...easy to work with? Listen, Joe, IMPERIAL ALMOST ENGRAVES ITSELF!"

"—you don't have to put on any acid-resist; you hardly have to scrub it at all; it sensitizes like a dream and etches fast and deep with no dirty bottoms. All in all—it's a cinch to work with Imperial Zinc."

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Imperial ZINC

is the employment, as the plasticizer for prolamine compositions, of ether phenol (in which the total number of carbon atoms does not exceed 18) and cyclic organic imides, respectively. Invented by Willard L. Morgan, Columbus, and Willard L. Morgan and Carl R. Faelten, Clinton Township, Franklin County, Ohio, respectively. Assigned by direct and mesne assignments to American Maize-Products Co., New York, N. Y. Applications March 5 and April 9, 1945, respectively. 24 and 23 claims, respectively.

2,452,606. THE COALESCED PHTHALOCYANINE PIGMENT OR COLORING MATERIAL of invention is useful in any pigmented coating composition. It is also useful in printing inks, in the coloring of rubber, paper, coated textiles, plastics, crayons, etc. In a preferred embodiment an intimate mixture of phthalonitrile, a metallic salt, and an anhydrous substratum are reacted in the absence of moisture and at a temperature ranging from about 180° to 250° C. Salts of iron, Nickel, aluminum and zinc are of particular utility. The substratum is selected from the group consisting of calcined, pigmentary titanium oxide and zirconium oxide. Reaction is carried on for one-half hour to two hours while reactants are mechanically agitated. Upon completion of reaction the resulting friable pigment product is cooled and ground. Invented by Alfred Siegel, Roselle, N. J. Assigned to E.I. du Pont de Nemours & Co., Wilmington, Del. Application November 20, 1945. 7 claims.

2,452,616. ZIRCONIUM LAKES AND METHOD OF MAKING SAME. Lakes are employed as color agents for inks, paints, lithographing colors, foods, drugs, etc. Generally, the lake system of the invention consists of the following parts: the dye solution, a hydrous water insoluble or partially soluble compound of zirconium and a water soluble salt of zirconium. The hydrous water insoluble or partially soluble compound of zirconium may consist of one or more compounds of zirconia, a portion of which may consist of zirconium hydroxide preferably precipitated by ammonia, the remainder consisting of various other types of hydrous zirconia precipitates. The zirconium hydroxide serves not only as a base for precipitation but is a distinct aid in fixing the dye. Extenders may be talc, barium sulphate, etc. Sodium stearate or stearic acid emulsified with triethanolamine may be added to the system. Invented by Eugene Wainer, Niagara Falls, N. Y., and Henry L. VanMater, Highland Park, N. J. Assigned to The Titanium Alloy Mfg. Co., Niagara Falls, N. Y. Application April 6, 1944. 15 claims.

2,452,992. COATING COMPOSITION OF FATTY DRYING OILS. The compositions, because of high gloss, flow and rapid drying characteristics, are useful as printing ink vehicles. One compound is prepared by heating 100 parts of maleic anhydride adduct and 44 parts of glycerine up to 190° C. Thirty parts of linseed fatty acid and 70 parts of soya bean fatty acid are added, the compound is divided into three equal portions and temperature is raised to 190° to 200° C. where it is held for two hours. A pale, straw color soft viscous resin having an acid value of 35 to 50 and a viscosity of three poises in toluol solution results. This resin was run with an equal weight of linseed oil, heat bodied to viscosity N to 200° C. and then run to 260° C. after three more parts of linseed oil had been included. The mass was cooled and checked with mineral spirits to a solution having a solid content of 70 percent; it had an acid number of 2.9 and a color of 3-4. Invented by William H. Butler, Bloomfield, N. J. Assigned to Bakelite Corp., New York, N. Y. Application May 29, 1943. 10 claims.

2,453,052. STAIN RESISTANT PLASTICIZED POLYVINYL CHLORIDE RESIN COATINGS. Plastics, stain resistant tableclothes with good drape properties as well as pocketbook and luggage covers, etc. may be prepared. One side of a textile fabric is first coated with a composition consisting of 10.9 percent polyvinyl chloride, 8.6 percent polypropylene glycol sebacate and 80.5 percent methyl ethyl ketone. After the composition is dried, a design may be imprinted using a printing ink of the following composition which has been developed to resist stains: 8.3 percent polyvinyl chloride, 18.0 percent pigments, 14.5 percent poylpropylene glycol sebacate, 14.9 percent cyclohexanone, 38.8 percent methyl ethyl ketone, and 5.5 percent methyl isobutyl ketone. A surface coating is then applied. This final coating is made up of 10.1 percent polyvinyl chloride, 7.4 percent chlorinated paraffin (42 percent chlorine), 1.0 percent silica gel, and 81.5 percent solvent. The compounds may also be in the form of unsupported films. Invented by Howard A. Van Etten Newburgh, N. Y. Assigned to E. I. du Pont de Nemours & Co., Wilmington, Del. Application July 3, 1946. 7 claims.

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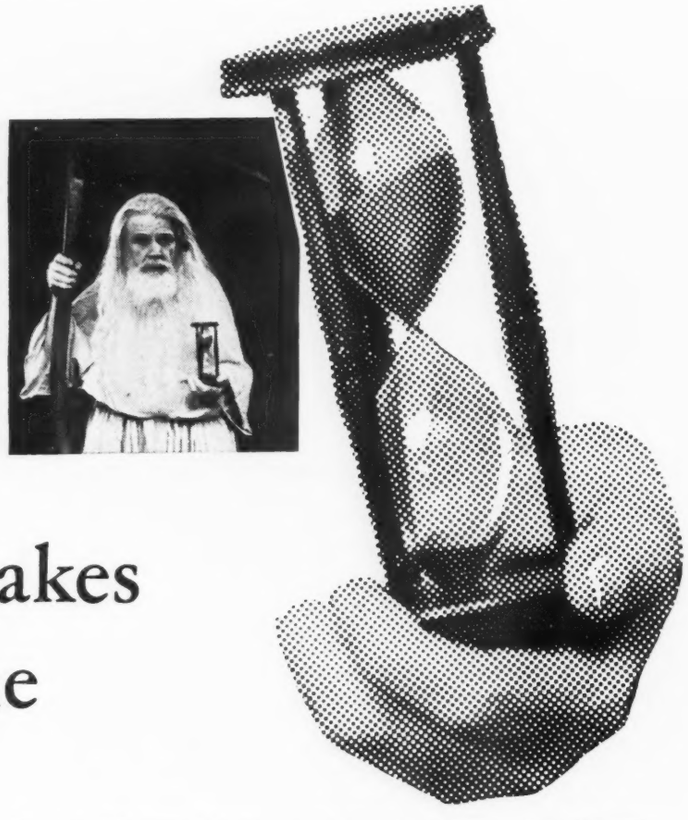
2,453,225. INDIGOID VAT DYESTUFF of the invention is characterized by good printing properties. The dyestuff can be used for dyeing and particularly for printing a great variety of materials; printing according to the usual potash printing process can be easily effected. In an example, 305 parts of 5:7-dibromoisatin are converted into the alpha-chloride and the solution of the chloride is coupled with a solution of 269 parts of 3-hydroxy-6:9-dichloronaphtho-(1.2.6) thiophene (Ring Index No. 1744) formerly called 5:8-dichloro-1,2-naphthioindoxyl in 1000 parts of chlorobenzene at 70° C. After cooling, suction filtering, washing and drying a blue powder is obtained which dissolves in concentrated sulfuric acid with a blue coloration and dyes cotton from a yellow vat reddish blue tints. Invented by Kurt Hoelzle and Edward Kambli, Basel, Switzerland. Assigned to Ciba Limited, Basel, Switzerland. Application September 20, 1945, in Switzerland October 13, 1944. 1 claim.

2,453,232. AN ANTHRIMIDE CARBAZOLE disclosed consists of two anthraquinone radicals, one of which contains, as nuclear substituent, a benzoylamino group the aryl radical of which carries an $-SO_2-R$ group, wherein R stands for a hydrocarbon radial containing up to 10 carbon atoms, the $-SO_2-$group being connected to a carbon atom on each side. Dyestuffs are suitable for dyeing and printing wool, silk and leather, and particularly cotton, linen, rayon and cellulose wool from regenerated cellulose. A printing preparation shown in an example contains 200 grams of a dyestuff paste (6 percent strength), 600 grams potash thickening, 100 grams urea, and 100 grams sodium formaldehyde sulfoxylate. Invented by Walter Kern, Sissach, Paul Sutter, Basel, Eduard Moergeli, Neuewelt, near Basel, and Theodor Holbro, Basel, Switzerland. Assigned to the Swiss firm of Ciba Limited. Application May 11, 1943, in Switzerland May 19, 1942. 7 claims.

2,453,410. ACID TREATMENT OF ANTHRAQUINONE-THIAZOLE VAT DYESTUFFS. Typical representative dyestuffs of the type concerned include 1,2,5,6-anthraquinone-C-diphenyl dithiazole. The method of converting such a dyestuff into very finely divided particles of uniform size comprises forming a slurry of one part of the dyestuff with 20-30 parts of from about 70.6 to about 72.6 percent sulfuric acid at about 25°-35° C., agitating the slurry at this temperature until conversion of the dyestuff to an insoluble sulfate is complete, hydrolysing the sulfate to the dyestuff and collecting the so-treated dyestuff. Uniformity of particle size is of importance, e.g., in a pigment padding process. Similarly in printing vat dyestuffs a fine product size is important in order that reduction may take place quickly. Invented by John F. Cullinan and Lawrence D. Lytle, Plainfield, N. J. Assigned to American Cyanamid Co., New York, N. Y. Application March 13, 1944. 5 claims.

2,453,490. PROCESS OF PRODUCING A BARIUM LAKE PIGMENT. An object of invention is to produce a new red azo pigment of special utility in printing inks. It has a brilliant bluish red shade, excellent resistance to bleeding in both water and oils and is capable of manufacture at moderate cost. Azo dye prepared by diazotizing 4-aminotoluene-3-sulfonic acid and coupling to beta-naphthol yields a pigment to satisfy the above requirements upon treatment according to invention. The azo pigment is converted into a barium lake in the presence of a soluble metallic carbonate, such as sodium bicarbonate, and the lake digested at elevated temperatures and at an alkalinity of a definite pH range. Products of particular utility are obtained when the conversion to the barium lake is carried out in the presence of sodium rosinate to give a rosinated barium lake. Lake formation is effected in the presence of the bicarbonate ion and mass is further digested at a pH of 10 or higher, with the result that the pigment lake is obtained in a special physical form that is microscopically crystalline and can be readily identified by means of X-ray diffraction technique. It possesses a special bluish red shade and other tinctorial properties. Invented by Jack Beniah Callaway, Summit, and Donald Bernard Killian, Newark, N. J. Assigned to E. I. du Pont de Nemours & Co., Wilmington, Del. Application May 23, 1946. 2 claims.

2,453,557 and 2,453,558. PRINTING INKS. Patent 2,453,557 is particularly directed to the manufacture of printing inks employing the usual ink vehicles such as vegetable drying oils. Process comprises mixing compacted carbon black with an organic substance which is liquid at 70° F., boils at a temperature above 140° F. and wets carbon black. Mixture is ground in a mill of the ball type at a temperature of from about 140° to about 200° F. but below the boiling point of the organic liquid. An ink of patent



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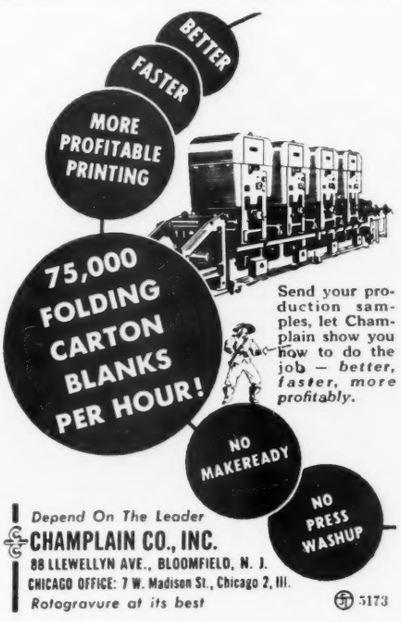
2,453,558 consists of a pigment such as carbon black, a mineral oil vehicle and from about two percent to twenty percent, by weight based on the oil, of a petroleum polymer which is fluid at room temperatures, has a viscosity of from about 200 seconds to 250 seconds Saybolt at 210° F. It is obtained by solvent extraction of solid absorbents used in the refining of a petroleum hydrocarbon which is a member of the group consisting of petrolatums, greases, and amorphous waxes. Invented by Andries Voet, New York, N. Y. Assigned to J. M. Huber, Inc., New York, N. Y. Application November 28, 1945. 8 and 10 claims, respectively.

2,453,692. THE 4-CYANO-2, 5-DIALKOXYACETO - ACETANILIDES claimed comprise 4-cyano-2, 5-dimethoxyacetoacetanilide and 4-cyano-2, 5-diethoxyacetoacetanilide. Products are azo dye coupling components useful in the manufacture of azo dyes and pigments. The dyes are excellently suited for dyeing and printing textile materials of various kinds. Invented by William H. von Glahn, Loudonville, and Herman A. Bergstrom, Albany, N. Y. Assigned to General Aniline & Film Corp., New York, N. Y. Application August 22, 1947. 3 claims.

2,453,752. EMULSION ADAPTED FOR COATING TEXTILES. Emulsion makes possible the applying of insoluble pigments on textile fabrics so that the fabric will be characterized by a soft feel and will not crack or wear off by mechanical abrasion. The pigment containing compositions can be utilized for printing on textile fabrics and are preferably water soluble or contain water-soluble ingredients at the time of application to fabric and are readily washed from the printing machinery; but they can be made water insoluble. The inner phase of the emulsion comprises a dispersion of a vulcanized vegetable oil (rapeseed) in a water-immiscible organic liquid, and the outer phase comprises an aqueous dispersion of the product obtained by adding urea and aldehyde to a casein dispersion, and which is capable of being formed into a water-soluble resin. Invented by Fred G. La Piana, Forest Hills, N. Y., and Herman S. Bosland, Paterson, N. J. Assigned to Stein, Hall & Co., Inc., New York, N. Y. Application November 2, 1940. 3 claims.

2,453,769. PREPARATION OF PHOTOSETTING COATING COMPOSITION. Inks are provided which set with sufficient rapidity as to be particularly useful for high-speed printing purposes. The ink contains as an essential ingredient not less than 20 percent of a compound having in its molecule aat least two radicals of the group consisting of eleostearate and keto eleostearate. A substantial amount of substances having a vapor pressure greater than eleostearin have been removed from the compound. As the paper leaves the press it is exposed to radiation from a source of ultra-violet light controlled to contain not less than 50 percent within the wave length band of 2800-3500 A. and to exclude a wave length of a band 2400-2500 A. which caused rapid setting. Black and blue pigments are used. Oitica oil, raw tung oil and linseed oil are used in the ink compositions. Carnauba wax can be used. Invented by Gerald L. Wendt, New York, N. Y. Assigned to Sun Chemical Corp., New York, N. Y. Application April 27, 1944; divided and this application August 21, 1946. 8 claims.

2,453,770. PREPARATION OF PHOTOSETTING COATING COMPOSITION. This patent is very closely related to the preceding companion patent. Like its companion it relates to coating and impregnating compositions, particularly printing inks which dry quickly enough to avoid the difficulties of smudging, smearing and offsetting when used with high-speed presses. The invention is applicable, however, to rapid drying of paints, varnishes, etc.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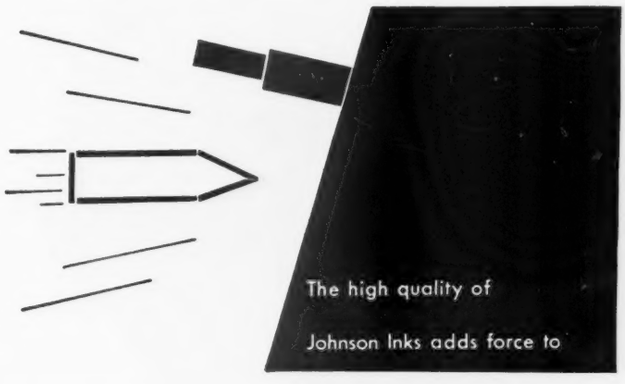
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The composition includes eleostearin and keto eleostearin, available in tung oil and oitica oil, and is responsive to light of certain limited wave lengths so as to photoset with desired rapidity to give the non-offsetting condition. Invented by Gerald L. Wendt, New York, N. Y. Assigned to Sun Chemical Corp., New York, N. Y. Original application April 17, 1944; divided and this application August 21, 1946. 8 claims.

Printing Presses and Equipment

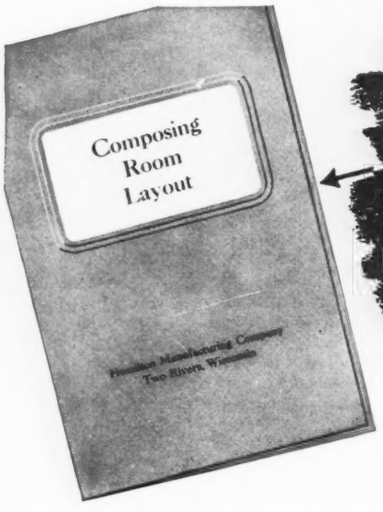
2,452,339. APPARATUS FOR PRINTING AND DRYING TEXTILE FABRIC includes a printing table below which is disposed a drying chamber. Successive sections of a continuous sheet of textile material are pulled across the table to be printed. A rod is provided at one end of table for snubbing the material uniformly across its entire width. Lines are provided at the other end of the table for adjusting the material to adjust the woof threads therein. Rollers are provided within the chamber to suspend at least two lengths of material therein in a zig-zag path while another length of material is on the table being printed. Invented by William Frank Uhlig, Newburgh, N. Y. Unassigned. Application February 14, 1946. 7 claims.

2,452,373. METHOD OF AND MEANS FOR REGISTERING FLAT BED COLOR PRINTING ELEMENTS WITH THEIR FIXED REGISTRY ELEMENTS. Invention includes a machine provided with a lower horizontal support for their fixed registry elements. A horizontal I-beam is disposed longitudinally of the machine and is slidable on a pair of horizontal cross bars. A double mirror unit is slidable on the beam; the double mirror unit and the beam being movable in horizontal planes between the printing and the registry elements, all suitable points being provided with anti-friction bearings. A special form of double mirror unit comprises oppositely disposed sets of coacting horizontally disposed mirrors, the horizontal mirrors being transparent and the angular mirrors non-transparent, whereby each angularly disposed non-transparent mirror will reflect to the eye of an observer combined images of the printing and registry elements. Invented by Earle L. Harley, Brooklyn, N. Y. Assigned to H. H. Heinrich, Inc., New York, N. Y. Application May 15, 1947. 14 claims.

2,453,735. FOUNTAIN SOLUTION ROLLER or water roller for use in planographic printing presents an outer peripheral body which includes a water swellable colloidal material in which are incorporated solid portions of oxalic acid. The acid being soluble in water is drawn into the colloidal material during swelling. The ability of the colloid to reject greasy ink and to provide for a limited degree of water receptivity is greatly improved by using the dibasic acid. Invented by William Craig Toland, Brookline, and Munroe H. Hamilton, Lexington, Mass. Assigned by mesne assignments to William Craig Toland, Brookline, Mass. Application January 18, 1945. 8 claims.

2,453,982. PRINTING PRESS COMPENSATOR. Printing press compensator maintains register of successive impressions created by the plurality of printing units in a multiple unit printing press so that the register of any individual printing unit can be corrected without closing or slowing down operation of the press. Mechanism of the invention, including a compensator roller and differential arm, accomplishes this result by increasing tension on one side of a printing unit, and at the same time decreasing tension of the opposite side to an equal degree. Tension differential thus created causes web to slip through opposed surfaces of printing couple thereby correcting register. Overall length of web in press remains constant and register of succeeding printing or other units is not affected, as would be the case if alteration of tension were not equally balanced by an opposing adjustment on the opposite side of the unit. Invented by William F. Huck, Forest Hills, N. Y. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application January 28, 1946. 5 claims.

2,454,093. WEB SPLICING DEVICE employs tacky adhesive to make the splice and employs the web running from the old web roll to the printing press or other web consuming apparatus as the means for accelerating the new roll to running web speed. The new web roll is mounted with its cylindrical surface parallel to the running web and movable toward the running web. The new roll is accelerated to a surface velocity approximating the speed of the running web by rollers that engage the new roll surface when the new roll is moved to accelerating position, thereby the new roll is accelerated to running



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speed prior to splicing. A knife severs the web while a plurality of offset rollers engage tension means to release tension on web along portion where knife moves to sever web. Invented by Oscar C. Roesen, Scarsdale, N. Y. Assigned to Wood Newspaper Machinery Corp., Plainfield, N. J. Application February 6, 1945. 17 claims.

2,454,170. STEREOTYPE CYLINDER PRINTING PLATE saves paper by reducing the width of the space used at the fold line of a double newspaper sheet. Plate may be formed in a casting machine having a rotatable core and a segment ring with an upstanding rib between the core and the matrix. Such ring may be used on an ordinary machine by merely changing the filling in one lower groove of core. The plate is therefore a rotatable core casting and the edge which prints next to the folding space has a cast recess in its end wall dividing the edge into two parts. One part, or the inner part, has an inclined face serving as a clamp. The second part, or outer part, constitutes a printing part having a surface which overhangs the inclined face. The recess also has a second face parallel to the printing surface, said face and printing surface being concentric. The ends of the two parts lie in the same plane at right angles to the cylinder plate axis, the contour and condition of the recessed inclined clamping face being complete at the time the plate is removed from the core. Invented by George A. Hiester, Seattle, Wash. Unassigned. Application February 23, 1942. 3 claims.

For Patent Research in the U. S. Patent Office, or a prompt estimate on any type of search, address INVENTION, INC., Munsey Bldg., Washington, D.C.

Executive ¶s

(Continued from Page 46)

sion in addition to his duties as head of the ball division.

Sanford G. Collier has joined American Type Founders Sales Corp. as a salesman for the Seattle (Wash.) branch territory. R. W. Hardy, Branch Manager, said Collier will cover the eastern Washington, Idaho and Montana area

Sanford G. Collier, appointed salesman for the Seattle (Wash.) branch of ATF.

for ATF. Collier has been employed as a pressman, foreman of the pressroom, and has also served as superintendent of the bindery and pressroom of the Acme Stamp & Printing Co. at Spokane. He will make his headquarters in Spokane.

Joseph Morningstar, President o Paisley Products, Inc., has announced that Calvert Leggett, former President of the Park Leggett Altman Co., has joined the Paisley organization as General Manager of the new Placo Div. The new division was formerly the Park Leggett Altman Co. which Paisley has purchased.

Calvert Leggett, named General Manager, Placo Div., Paisley Products, Inc.

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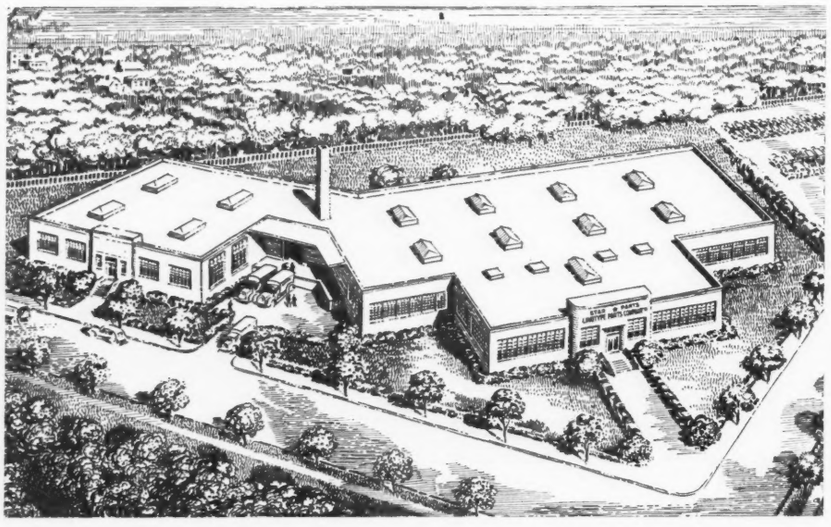

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The purchase included all assets of the firm, formulas, manufacturing processes and equipment. The Placo Div. will handle the territory of upper and western Wis., Minn., N. D., S. D., Iowa, Nebr., Wyo., Mont., and Utah.

The appointment of Paul N. Baxter as Manager of the Los Angeles Branch has been announced by International Printing Ink Corp., Ltd., of California. Baxter takes over his new duties on the West Coast after 18 years with IPI in the Middle West. Joining IPI in 1931, he received his technical training at the company's Chicago factory. His first assignment was to the Minneapolis Branch and Service Station. Completing his sales apprenticeship in the North, Baxter returned to Illinois where he became a member of the Chicago IPI sales office.

International Printing Ink Corp. Ltd., of Calif., announces appointment of Paul N. Baxter as Manager of its Los Angeles Branch.

Frank J. Tolan, sales representative of the Miehle Printing Press and Mfg. Co., retired recently after 37 years of service with the company. At the annual luncheon of the Miehle sales force, he was presented with a watch on behalf of his colleagues by Ralph J. Waite, Boston Manager, who joined the company at about the same time as Tolan. For the last 29 years Tolan made his headquarters in Cleveland. His former territory now has been divided between H. H. Shierk, who has added the metropolitan Cleveland area to his Detroit and Toledo territory, and William H. Hammett, Jr., who covers Southern Ohio from headquarters in Cincinnati.

H. H. Shierk looks at the watch presented to Frank J. Tolan of Miehle Printing Press and Mfg. Co. upon the latter's retirement.

Eldon M. Eckhart, Executive Vice President of the J. M. Huber Corp., passed away at his home in Amarillo, Tex., November 28, at the age of 52. He was in charge of Huber's carbon black and oil and gas operations with headquarters at Borger, Tex. Mr. Eckhart was born in 1896 near Peoria, Ill. After attending Illinois State Normal College, he became a teacher for the government in the Philippines. When the United States entered World War I, he appealed directly to the White House for a release from his teaching contract so that he could join the Armed Forces. When the release came, he entered the Air Corps. After the war he settled in Louisiana and in 1926 joined Huber as superintendent of its Breckenridge, Tex., carbon plant. Later he was transferred to Swartz, La., as superintendent of its plant there. In

Eldon M. Eckhart, Executive Vice President of the J. M. Huber Corp., who recently passed away.

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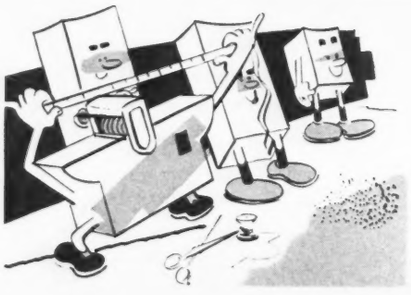

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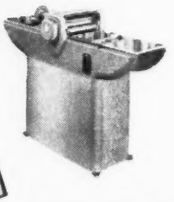
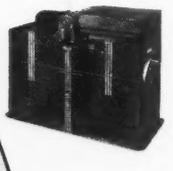


Model 401 Rotashaver (for plates up to 12" x 15")



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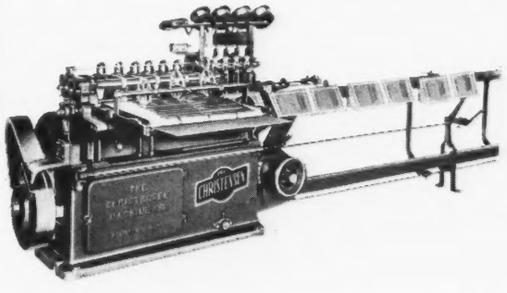

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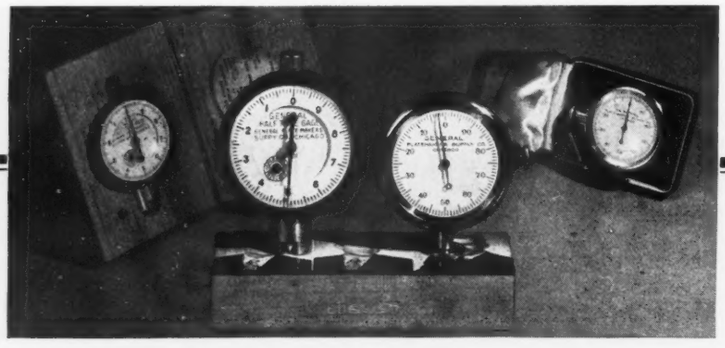
Sir R. Geoffrey Ellis, Bt. D.L., Chairman of Monotype Corp. Ltd. of London, and E. Silcock, General Manager of the London firm, visited the home office of Lanston Monotype Machine Co. recently. They discussed questions of mutual interest with President Joseph F. Costello and other executives of the latter Company. While in the United States the visitors went also to Washington and New York. Shown in the above picture from left to right are Silcock, Costello and Ellis.

1936 he went to Borger as assistant to the general manager and in 1938 he became vice president in charge of the Borger operation. He was named to the executive vice presidency in 1946, which position he held until his death.

Ernest Scherer, developer of the Rolup Process and Scherer cold top enamel for photoengraving, has been appointed superintendent of the engraving department of the Detroit *News*. Mr. Scherer came to the *News* from the Minneapolis (Minn.) *Times* where he was superintendent of the engraving department. Mrs. Scherer is the former secretary to the circulation manager of the Omaha (Neb.) *Bee*. The Scherer family with three children is now residing in Detroit. Under the supervision of Mr. Scherer, the Rolup method is being installed in the Detroit *News* photoengraving department. The basis of the system is an acid-resisting ink which is used instead of dragon's blood as an acid resist. To begin the making of a halftone, a negative is made, printed on a zinc plate, and is sent to the etcher for the first bite. The heated plate is then inked (or rolled up) lengthwise and sideways, using a special type of ink and special roller. The halftone is then etched for the second or depth bite. The ink is washed off the plate. The plate is returned to the etching machine to round off the shoulders and reetch the highlight dots to pyramid shape. The secret of the process is in the acid resisting ink and the temperature of both plate and ink when it is rolled. The ink not only covers the surface of the dots when the ink roller is applied, but if at the correct temperature a sufficient amount of the ink will curl around the walls to form shoulders, thereby protecting them so there is little or no undercutting of the plate by the etching acid. It is claimed that by using this process a greater middletone depth is achieved.



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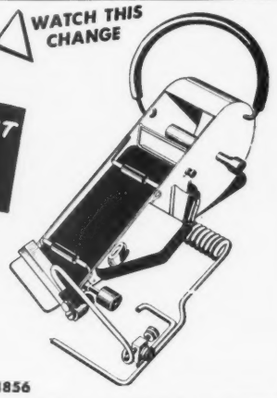

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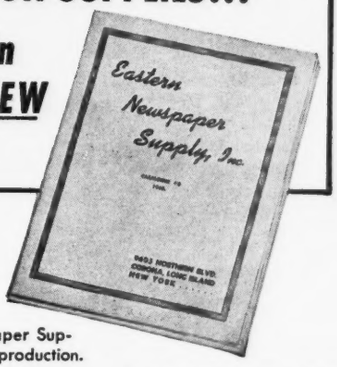

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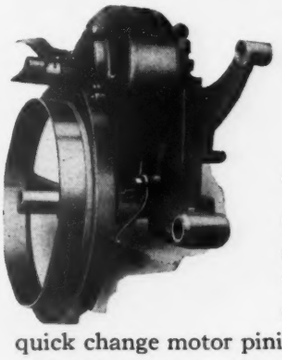

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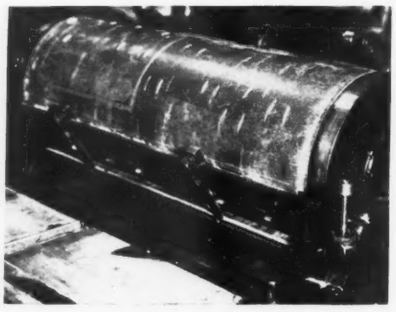

by cutting a number of vertical slits with a knife in the tympan where the printing impression did not strike. These slits were curved. This provided slight air pockets under the stock being printed which in turn eliminated the trouble.

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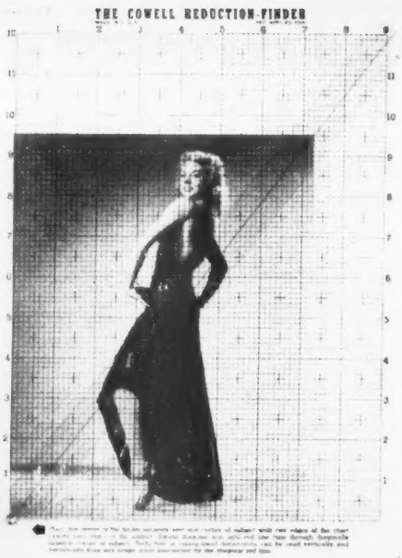

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